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WAGES AND HOURS OF LABOR SERIES

WAGES AND HOURS OF LABOR
IN THE IRON AND STEEL
INDUSTRY : 1907 TO 1924



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WAGES AND HOURS OF LABOR IN THE IRON AND STEEL INDUSTRY: 1907 TO 1924

INTRODUCTION AND SUMMARY

Earnings per hour, customary hours of labor, and actual hours and earnings in one pay period in 1924 are presented in this report for wage earners in 10 departments of the iron and steel industry in the United States. Summary figures for preceding years, taken from previous reports of the bureau,¹ are also shown for each department except standard rail mills.²

The statistics herein presented may be taken as fairly representative of the industry, as they are based on a sufficient number of representative plants in each district to show conditions in their locality.

Statistics are presented in this report for employees in—

- Blast furnaces, 1907-1924.³
- Bessemer converters, 1907-1924.³
- Open-hearth furnaces, 1910-1924.³
- Puddling mills, 1914-1924.⁴
- Blooming mills, 1910-1924.³
- Plate mills, 1910-1924.³
- Standard rail mills, 1924 only.³
- Bar mills, 1907-1924.⁴
- Sheet mills, 1910-1924.³
- Tin-plate mills, 1910-1924.⁴

The greater part of the data was obtained through personal visits of agents of this bureau to the several plants, the remainder being obtained from the plants through correspondence.

The figures for 1924 are based on actual pay-roll data for one pay period. The period selected for the survey was from January 16 to 31, and the majority of the reports cover that period. In a few instances, when conditions in the plants in January were not representative, the reports were made for a normal period as near January as available. Of the 189 schedules obtained, 129 are for the last half of January, 37 are for some other period in January, 17 are for a

¹ See, for years up to 1915, Bul. No. 218; for 1917, Monthly Labor Review for March, 1918; for 1919, Bul. No. 265; for 1920, Bul. No. 305; and for 1922, Bul. No. 353.

² In this department only three mills which had been scheduled formerly were found in operation and producing rails the major part of their time. The other four rail mills covered this year were new and in some cases were located in sections of the country not heretofore included in this department, hence, any comparison made between the 1924 figures and those for other years might be more or less misleading. For this reason the bureau decided to make no comparison as between the old and the new figures and data for rail mills are shown for 1924 only.

³ No data available for 1916, 1918, 1921, or 1923.

⁴ No data available for 1916, 1917, 1918, 1921, or 1923.

period in February, and 4 cover a period in March. The remaining 2 schedules were reported for a period in October, 1923. The figures for the years 1907 to 1915 are in most cases for the second half of May, those for 1917 are for a pay period in September, and those for 1919 are nearly all for a half-month pay period in the first three months of that year. The 1920 survey covered the last half of October, and in most instances the figures for 1922 relate to the first half of October.

Before the World War the major branches of the steel industry were almost without exception operated on a two-shift basis. During the war there was some tendency toward the three-shift system but following the armistice many of the plants which had adopted the three 8-hour shifts for emergency reasons returned to the two 12-hour shifts. In 1922 the President of the United States invited the steel manufacturers of the country to meet with him in Washington in an endeavor to find some means if possible whereby the long 12-hour shift could be eliminated. The conference was held May 18, 1922, and 41 of the leading manufacturers decided to abolish the long working hours of employees as far as practicable and as soon as labor conditions would permit. In the summer of 1923 the first general reduction was made and the present survey shows clearly the extent to which hours have been reduced in this industry.

In 1922, 69 per cent of all blast-furnace employees reported worked 72 or more hours per week. Sixty-seven per cent in the Bessemer converting department, 64 per cent in open-hearth furnaces, 57 per cent in blooming mills, 39 per cent in plate mills, and 16 per cent in bar mills also worked 72 hours or longer. In 1924, however, working time had been so far reduced that only 9 per cent of the employees in blast furnaces, 7 per cent in open-hearth furnaces, 3 per cent in blooming mills, 4 per cent in plate mills, and 3 per cent in bar mills were on a basis of 72 hours or more. Only two employees were found in the Bessemer converting department working as many as 72 hours per week in 1924, while 8 per cent of the employees in rail mills worked 72 hours or more. Employees in sheet and tin-plate mills have been on an 8-hour basis for many years, and hours per week in these departments are subject to only slight changes from year to year. The 12-hour turn had previously been practically eliminated from the puddling mill department also and scarcely any change in working time was noticed from 1922 to 1924.

While full-time hours per week were decreased so materially, wage rates were adjusted so that employees received but slightly less pay for the shorter shifts than they had formerly received for working the longer hours. Later, substantial wage increases were effected in practically every department, so that the increase in hourly earnings has even more than offset the reduction in hours per week and full-time earnings per week still show an increase in all departments except plate mills.

The general tables in this report refer to one specific period in each year and do not, therefore, in any way reflect month-to-month changes.

The average earnings per hour were obtained by dividing the total amount earned by the total hours actually worked in an occupation. As before stated, it was not possible in all cases to obtain a representative pay period for the last half of January. Also some

establishments pay their employees weekly, some biweekly, and one establishment maintains a 10-day pay period. When weekly pay rolls were found, agents combined the pay rolls for two consecutive weeks, making a two-week period.

Before combinations of actual time and actual earnings could be made and averages computed therefrom it became necessary to adjust the figures of these exceptional pay rolls into figures equivalent to those for a pay period having the same full-time hours as the selected January period. In making this adjustment the actual average earnings per hour have not been affected.

The earnings per hour shown in the tables include both the earnings of time workers and those of tonnage or piece workers. All earnings per hour are for individuals, no contractors being included.

The full-time hours of labor per week shown in the tables are the customary regular hours of work of individual employees under normal conditions in the establishment. The working time is the time on duty, including intervals of waiting for work—in other words, the time between the hour of reporting for duty and the hour of going off duty. The working time of individual employees is not always the working time of their occupation as a whole. Some plants which operate seven days per week make provision for laying off each employee one day a week. In such a plant the full-time hours per week of an employee working 8 hours a day is 48 hours. In all tables in this report, whether the number of positions have been used as the number of employees, as is the case for the years up to and including 1917, or the actual number of individual employees has been reported, as for the years 1919 to 1924, the full-time hours of the man in the position have been shown and not the hours of the position. The term "positions" or "jobs" used in this report is defined as the number of places to be filled by employees working the regular full time required to operate a plant under normal working conditions, with provision for two or three shifts or turns per day, but with no provision for relief of employees. For example, a blast furnace must have a keeper on duty all the time. If the furnace employees are on a 12-hour shift then there are two positions for keeper at the furnace. If on a 3-shift basis there are three keepers' positions.

The full-time earnings per week are the earnings per week of employees working their customary full time or the earnings on broken time reduced to equivalent earnings for a full week.

Five general statistical tables are presented in this report. Summary figures for preceding years are brought into comparison with figures for 1924 in Tables A and B, while Tables C, D, and E contain data for 1924 only. Probably the two most important are Tables C and E, which show the earnings and customary working time of employees for 1924 in detail, thus adding considerably to the completeness of the report. A statement and explanation of the data contained in each table is given on pages 13 to 16. All of these tables are published in 10 parts, one part for each department, each being placed under the heading of the department to which it relates.

INDEX NUMBERS, BY DEPARTMENTS

In the sections of this report relating to the several departments the full-time earnings per week, the full-time hours of labor per week, and the earnings per hour are shown for each of the principal productive occupations. These occupation figures have been consolidated and are here presented in the form of index numbers for each department (except standard rail mills) as a whole. The purpose of these indexes is to indicate the direction and extent of the changes in wages and hours which have taken place from year to year. In the wage studies of the industry for the earlier years data covering the principal productive occupations only were obtained, data for secondary productive and nonproductive labor not being collected. All occupations have been included in the wage investigations of 1914, 1915, 1920, 1922, and 1924, but the principal productive occupations only have been used in computing index numbers for the departments for those years. This was done so that the data used for the several years, though not complete, would be strictly comparable.

Table 1 shows for each department separately index numbers for average full-time hours per week, earnings per hour, and full-time earnings per week, computed from the data for the principal productive occupations. The index for each year is simply the per cent that the average for that year is of the average for 1913. The year 1913 is taken as the base, as it was the last full year before the World War. For puddling mills 1914 is taken as the base, as data for this department were first obtained for that year. The years shown are those for which data are available.

TABLE 1.—INDEX NUMBERS OF AVERAGE FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK IN THE COMBINED PRINCIPAL PRODUCTIVE OCCUPATIONS, BY DEPARTMENT AND YEAR

[1913=100, except for puddling mills, for which 1914=100]

Department and year	Index numbers of—			Department and year	Index numbers of—		
	Full-time hours per week	Earnings per hour	Full-time earnings per week		Full-time hours per week	Earnings per hour	Full-time earnings per week
Blast furnaces:				Bessemer converters—			
1907.....	103	88	91	Continued			
1908.....	101	85	86	1913.....	100	100	100
1909.....	102	83	85	1914.....	98	90	90
1910.....	102	87	90	1915.....	98	94	94
1911.....	102	89	90	1917.....	98	151	149
1912.....	99	92	90	1919.....	95	208	218
1913.....	100	100	100	1920.....	98	241	254
1914.....	97	101	97	1922.....	98	170	176
1915.....	97	101	97	1924.....	75	227	182
1917.....	98	156	152	Open-hearth furnaces:			
1919.....	100	250	248	1910.....	99	89	86
1920.....	93	283	258	1911.....	96	89	85
1922.....	93	191	176	1912.....	98	92	91
1924.....	75	254	190	1913.....	100	100	100
Bessemer converters:				1914.....	97	100	97
1907.....	102	85	86	1915.....	92	104	96
1908.....	98	79	79	1917.....	99	152	150
1909.....	102	82	84	1919.....	98	239	234
1910.....	103	86	88	1920.....	99	282	283
1911.....	101	82	84	1922.....	93	202	188
1912.....	101	90	90	1924.....	74	269	199

TABLE 1.—INDEX NUMBERS OF AVERAGE FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK IN THE COMBINED PRINCIPAL PRODUCTIVE OCCUPATIONS, BY DEPARTMENT AND YEAR—Continued

[1913=100, except for puddling mills, for which 1914=100]

Department and year	Index numbers of—			Department and year	Index numbers of—		
	Full-time hours per week	Earnings per hour	Full-time earnings per week		Full-time hours per week	Earnings per hour	Full-time earnings per week
Puddling mills:				Bar mills—Continued			
1914.....	100	100	100	1910.....	104	95	99
1915.....	98	96	94	1911.....	106	90	93
1919.....	98	269	280	1912.....	103	90	93
1920.....	103	279	295	1913.....	100	100	100
1922.....	96	155	154	1914.....	100	96	97
1924.....	96	234	236	1915.....	100	98	98
Bloomng mills:				1919.....	103	214	221
1910.....	102	81	83	1920.....	99	252	253
1911.....	101	82	84	1922.....	98	173	171
1912.....	101	87	88	1924.....	89	207	189
1913.....	100	100	100	Sheet mills:			
1914.....	97	102	98	1910.....	102	84	85
1915.....	97	104	100	1911.....	102	91	92
1917.....	100	133	131	1912.....	101	93	94
1919.....	96	220	217	1913.....	100	100	100
1920.....	91	233	220	1914.....	100	101	101
1922.....	95	169	166	1915.....	101	92	92
1924.....	78	221	177	1917.....	104	178	183
Plate mills:				1919.....	99	193	195
1910.....	99	89	88	1920.....	100	229	240
1911.....	98	87	85	1922.....	101	147	154
1912.....	100	92	91	1924.....	100	170	179
1913.....	100	100	100	Tin-plate mills:			
1914.....	99	101	100	1910.....	98	88	87
1915.....	99	107	106	1911.....	99	98	97
1917.....	100	156	156	1912.....	99	99	98
1919.....	102	233	237	1913.....	100	100	100
1920.....	99	267	265	1914.....	100	102	102
1922.....	95	186	175	1915.....	100	102	101
1924.....	82	215	172	1919.....	97	220	217
Bar mills:				1920.....	95	252	253
1907.....	106	94	99	1922.....	94	175	171
1908.....	106	84	89	1924.....	94	214	211
1909.....	107	86	91				

In addition to the above table of index numbers, which have been computed for the principal productive occupations alone, a comparison of the earnings per hour of employees in all occupations and those in the principal productive occupations has been prepared. The earnings for the year 1924 are compared with those for 1914, 1920, and 1922 for each department except rail mills, and the percentage of increase or decrease is shown in the following table.

Only slight differences are noted between the increases or decreases in earnings per hour in the principal productive occupations and in all occupations in most instances. In a few cases, however, the variation in the proportion of skilled and unskilled labor in the two groups was sufficient to cause considerable change.

TABLE 2.—PER CENT OF INCREASE OR DECREASE IN EARNINGS PER HOUR IN THE PRINCIPAL PRODUCTIVE OCCUPATIONS AND IN ALL OCCUPATIONS IN 1924 AS COMPARED WITH 1914, 1920, AND 1922, BY DEPARTMENT

Department	Per cent of increase (+) or decrease (—) in—					
	Principal productive occupations in 1924 as compared with—			All occupations in 1924 as compared with—		
	1914	1920	1922	1914	1920	1922
Blast furnaces.....	+153	-10	+33	+152	-9	+31
Bessemer converters.....	+153	-6	+33	+145	-8	+33
Open-hearth furnaces.....	+169	-5	+33	+168	-5	+32
Puddling mills.....	+134	-16	+51	+120	-19	+45
Blooming mills.....	+118	-5	+31	+128	-7	+30
Plate mills.....	+113	-20	+16	+118	-16	+18
Bar mills.....	+115	-18	+20	+110	-18	+20
Sheet mills.....	+68	-26	+15	+66	-22	+17
Tin-plate mills.....	+110	-15	+22	+87	-16	+22

FULL-TIME WORKING HOURS PER WEEK

Table 3 shows a percentage distribution of all employees in all occupations in each department according to their customary full-time hours per week. The 1924 percentages are compared with those for 1914, 1915, 1920, and 1922 for all departments except rail mills. The figures for rail mills are presented for 1924 only.

The classified hours of the table are average hours for the individual and do not reflect the long hours of one week that may alternate with shorter hours the next. Thus a man who works 72 hours one week and 60 hours the next has an average of 66 hours, which is tabulated in the group "Over 60 and under 72."

TABLE 3.—PER CENT OF EMPLOYEES IN ALL OCCUPATIONS WORKING SPECIFIED NUMBER OF AVERAGE FULL-TIME HOURS PER WEEK, 1914 TO 1924, BY DEPARTMENT AND YEAR

Department and year	Number of plants	Per cent of employees whose average full-time hours per week were—							
		48 and under	Over 48 and under 60	60	Over 60 and under 72	72	Over 72 and under 84	84	Over 84
Blast furnaces:									
1914.....	38	(1)	5	13	12	22	7	41	(1)
1915.....	38	(1)	6	12	12	23	7	41	(1)
1920.....	28	1	18	7	11	16	17	29	(1)
1922.....	32	1	7	13	10	39	13	17	(1)
1924.....	36	2	59	15	15	3	1	5	(1)
Bessemer converters:									
1914.....	12	12	9	4	11	40	13	12	-----
1915.....	12	12	7	5	8	44	11	13	-----
1920.....	11	14	7	2	14	25	17	21	-----
1922.....	11	11	6	6	10	53	5	9	-----
1924.....	11	50	28	17	5	(1)	-----	-----	-----
Open-hearth furnaces:									
1914.....	22	(1)	7	6	9	23	32	24	(1)
1915.....	22	(1)	7	5	11	24	30	23	(1)
1920.....	19	1	32	2	9	14	38	6	(1)
1922.....	22	3	15	4	15	28	20	16	(1)
1924.....	26	6	69	5	12	2	3	2	-----
Puddling mills:									
1914.....	29	27	55	6	9	1	1	(1)	-----
1915.....	29	31	53	6	9	1	(1)	(1)	-----
1920.....	15	24	41	12	15	7	(1)	1	(1)
1922.....	13	41	33	10	15	(1)	1	1	(1)
1924.....	17	27	53	9	9	1	1	1	(1)

¹ Less than 1 per cent.

TABLE 3.—PER CENT OF EMPLOYEES IN ALL OCCUPATIONS WORKING SPECIFIED NUMBER OF AVERAGE FULL-TIME HOURS PER WEEK, 1914 TO 1924, BY DEPARTMENT AND YEAR—Continued

Department and year	Number of plants	Per cent of employees whose average full-time hours per week were—							
		48 and under	Over 48 and under 60	60	Over 60 and under 72	72	Over 72 and under 84	84	Over 84
Blooming mills:									
1914	23	3	8	5	8	59	9	9	(1)
1915	23	2	7	4	7	58	12	9	(1)
1920	20	12	12	2	12	35	18	8	(1)
1922	24	4	21	7	12	27	18	12	(1)
1924	25	27	48	12	10	1	1	1	
Plate mills:									
1914	13		3	4	44	39	6	4	
1915	13		5	5	41	38	7	4	
1920	11	(1)	5	4	41	42	4	3	
1922	12	(1)	22	16	22	28	4	7	(1)
1924	13	39	23	24	20	(1)	1	2	
Standard rail mills:									
1924	7	21	37	20	13	(1)	7	(1)	
Bar mills:									
1914	57	4	31	12	44	7	2	1	
1915	57	8	30	10	42	8	1	(1)	
1920	25	9	28	8	40	12	3	(1)	
1922	25	6	39	4	35	14	1	1	
1924	31	25	36	26	10	2	(1)	1	(1)
Sheet mills:									
1914	15	62	2	8	10	13	2	2	
1915	15	61	2	10	12	11	2	2	
1920	13	64	6	8	9	9	2	1	
1922	14	60	8	10	10	7	2	3	(1)
1924	14	66	12	11	4	5	1	1	(1)
Tin-plate mills:									
1914	11	59	17	9	12	2	(1)	1	(1)
1915	11	60	18	9	11	1	1	1	(1)
1920	9	58	18	6	10	7	1	(1)	(1)
1922	9	61	18	5	9	5	1	(1)	(1)
1924	9	66	19	13	2	(1)	(1)	(1)	(1)

¹Less than 1 per cent.

Referring to the figures for blast furnaces for 1914, 70 per cent of the employees in the 38 plants reported customarily worked 72 or more hours per week, while only 5 per cent worked less than 60 hours. In 1915 working time remained practically the same, but in 1920, following the necessarily long hours due to war emergency, the percentages of employees whose working time fell within those classifications were 62 and 19, respectively. In 1922 an increase occurred and only 8 per cent of the employees are shown as having weekly hours under 60. In 1924, however, following the general reduction in the working time of employees in the latter part of 1923, 61 per cent worked less than 60 hours per week and 39 per cent worked 60 or more hours. Only 9 per cent worked as many as 72 hours.

Phenomenal reductions in the working time of employees is noticed also in all other departments except puddling, sheet, and tin-plate mills. In sheet and tin-plate mills the 8-hour turn had long ago been found to be more profitable for both employer and employee on account of the speeding up of production made possible by the shorter working hours, and except for a small per cent of the employees, mostly laborers, these departments have operated on a three-shift basis for many years. The long turn in puddling mills also had previously been eliminated to a large extent.

FULL-TIME WORKING DAYS PER WEEK

Employees in all occupations combined are classified by percentages according to their customary number of turns per week in Table 4. As in Table 3, figures for rail mills are presented for 1924 only, while percentages for 1914, 1915, 1920, and 1922, in addition to those for 1924, are shown for all other departments.

TABLE 4.—PER CENT OF EMPLOYEES IN ALL OCCUPATIONS WORKING EACH SPECIFIED NUMBER OF DAYS PER WEEK, 1914-1924, BY DEPARTMENT AND YEAR

Department and year	Number of plants	Per cent of employees whose customary working days per week were—									
		5	5 and 6 alternately	5, 5, and 6 in rotation	5, 6, and 6 in rotation	6	5 and 7 alternately	6 and 7 alternately	6, 6, and 7 in rotation	6, 7, and 7 in rotation	7
Blast furnaces:											
1914	38					42		5	(1)		53
1915	38					42		4	(1)		54
1920	28					29		17			54
1922	32					57		14			29
1924	36					20		5		30	45
Bessemer converters:											
1914	12					80		3	3	(1)	13
1915	12					80		3	3	(1)	14
1920	11					59		10	3	2	26
1922	11					81		2	4	3	10
1924	11					71		4	7	10	8
Open-hearth furnaces:											
1914	22					39		26	(1)	(1)	34
1915	22	(1)	(1)			39		27	(1)	(1)	34
1920	19		(1)			27	(1)	37		3	33
1922	22	(1)				50		16	4	2	27
1924	26					16		6	12	14	52
Puddling mills:											
1914	29	13	63	8		15		1			1
1915	29	24	50	11		13		1			1
1920	15	(1)	60	13		26		(1)			1
1922	13	17	47	15		19		(1)			2
1924	17	8	62	2		26		(1)			2
Blooming mills:											
1914	23	2	2			74		7		(1)	11
1915	23	2	1			73		9	3	1	11
1920	20	1	(1)			67		14	2	1	15
1922	24	(1)	5			56		17	3	1	18
1924	25		6			38		4	19	12	21
Plate mills:											
1914	13		34			57		3		(1)	6
1915	13	(1)	35			55		3		(1)	6
1920	11		18			78		1			3
1922	12	(1)	28			60		3			9
1924	13	(1)	12			66		3		3	11
Standard rail mills:											
1924	7					44		17	(1)	29	10
Bar mills:											
1914	57	6	47	2	1	38	(1)	1	4	(1)	1
1915	57	6	48	1	1	43	(1)	1	(1)	(1)	1
1920	25	3	33	4	3	46	(1)	3	7	1	1
1922	25	1	33	2	3	47	(1)	2	7	(1)	1
1924	31	8	25	5	9	48	(1)	1	(1)	(1)	2
Sheet mills:											
1914	15	(1)	2	58	3	22		1			4
1915	15	1	3	55	4	32		1			4
1920	13	1	3	53	6	33		1			3
1922	14	2	2	45	15	31		1			4
1924	14	1	4	47	15	30		(1)			4
Tin-plate mills:											
1914	11	(1)	4	58		37		(1)			1
1915	11	(1)	3	57		37		(1)			2
1920	9	1	6	55		38		(1)			1
1922	9	1	5	54		38		2			1
1924	9	(1)	2	51		44		1			2

¹ Less than 1 per cent.

While customary full-time hours per week have been reduced to a large extent in practically every department of the industry, the number of turns worked per week has increased in a number of them. In open-hearth furnaces 52 per cent of the employees reported in 1924 worked 7 days per week, while an additional 32 per cent alternated or rotated regularly from 6 to 7 days. This is the largest amount of 7-day work reported for any year shown. In 1920, the previous high year, 33 per cent of the employees worked 7 days per week and 40 per cent alternated between 6 and 7 days.

Seven-day work in blast furnaces also increased. In 1924, 80 per cent of the employees worked 7 days either all or part of the time, while in 1914 only 58 per cent worked that many days per week. Blooming mills also show more 7-day work in 1924 than any other year reported. Working days in Bessemer converters were at the highest point in 1920, although more turns per week were worked in 1924 than in any of the other three years. Changes in 5 of the remaining 6 departments were comparatively slight. Figures for rail mills are shown for 1924 only, and no comparison can be made for that department.

COMMON LABORERS

Nearly all common laborers in the iron and steel industry are paid on an hourly basis and their earnings depend upon the number of hours worked. The basic labor rate is practically the same in all departments of a plant, and by it, to a large extent, are determined the rates for other occupations requiring little skill. The rate for common labor, therefore, is of importance beyond the limits of the occupation proper.

In this survey "common labor" has been confined as far as possible to laborers, wholly unskilled and more or less a floating gang, who worked in and about the mill proper, but upon whose work the mill was not primarily dependent for operation. While the various methods used in the several plants in classifying common labor has led to numerous complications in the tabulation, no employee has been placed under that heading who was not paid the common labor rate in the plant in which he worked.

Average earnings per hour of common laborers from 1907 to 1924, so far as available, in 9 of the 10 departments treated in this report are shown in Table 5. Figures for standard rail mills are not shown separately, as no comparison of the 1924 averages with those of former years is made for that department in this report.¹ The average earnings for common laborers for all departments by districts, however, include the rail mill earnings for every year in which data were collected except 1924. For this year no attempt has been made to group the rail mills according to geographical districts; the averages shown for the districts therefore include 9 departments only. The average earnings for all departments in all districts at the end of the table, however, do contain the rail mill figures. The figures presented below are also published in the several sections of this report relating to the specific departments.

¹ See note 2, p. 1.

TABLE 5.—AVERAGE EARNINGS PER HOUR OF COMMON LABORERS IN SPECIFIED DEPARTMENTS OF THE IRON AND STEEL INDUSTRY, 1907 TO 1924, BY DISTRICT AND YEAR

[For number of plants reporting see sections relating to the specified departments, published elsewhere in this report]

District and year	Average earnings per hour in—									
	All departments	Blast furnaces	Bessemer converters	Open hearth furnaces	Puddling mills	Bloom-ing mills	Plate mills	Bar mills	Sheet mills	Tin-plate mills
Eastern:										
1907	\$0.134	\$0.135							\$0.132	
1908	.120	.115							.131	
1909	.123	.119							.131	
1910	.142	.142		\$0.145		\$0.143	\$0.131		.147	
1911	.141	.140		.146		.139	.131		.145	
1912	.144	.144		.152		.141	.133		.145	
1913	1.157	.151		.168		.162	.151		.156	
1914	1.156	.153		.169	\$0.163	.172	.151		.151	
1915	1.155	.151		.171	.157	.154	.151		.150	
1917	.278	.271		.287		.250	.250			
1919	.398	.423		.408	.400	.437	.368		.409	
1920	.451	.444		.485	.451	.437	.398		.479	
1922	.322	.345		.326	.323	.326	.300		.313	
1924	.386	.394		.388	.410	.389	.349		.374	
Pittsburgh:										
1907	.154	.152	\$0.156						.154	
1908	.156	.154	.156						.157	
1909	.152	.152	.153						.151	
1910	1.164	.166	.164	.162		.168	.167		.161	\$0.164
1911	1.166	.165	.167	.164		.170	.168		.163	.166
1912	1.167	.163	.168	.165		.169	.172		.163	.168
1913	1.180	.191	.192	.190		.192	.191		.188	.191
1914	1.180	.192	.193	.188	.190	.192	.188		.183	.192
1915	1.180	.189	.193	.193	.189	.192	.189		.184	.192
1917	1.301	.292	.289	.300		.300	.300		.321	
1919	1.480	.484	.485	.471	.447	.489	.484		.482	.460
1920	1.530	.525	.532	.537	.529	.537	.532		.528	.517
1922	1.390	.356	.359	.365	.362	.359	.357		.358	.363
1924	.451	.451	.459	.448	.423	.466	.472		.451	.430
Great Lakes and Middle West:										
1907	.158	.162	.154						.159	
1908	.153	.152	.152						.158	
1909	.151	.153	.146						.157	
1910	1.163	.162	.161	.162		.163	.164		.167	
1911	1.166	.166	.164	.166		.166	.164		.166	
1912	1.168	.166	.166	.170		.167	.162		.170	
1913	1.189	.189	.190	.190		.190	.195		.189	.187
1914	1.189	.190	.191	.191	.182	.190	.190		.190	.186
1915	1.188	.187	.191	.191	.180	.190	.189		.190	.186
1917	.313	.296	.297	.299		.295	.289		.335	
1919	1.469	.466	.501	.485	.464	.487	.469		.450	.434
1920	1.541	.549	.545	.559	.521	.528	.514		.526	.547
1922	1.363	.374	.367	.366	.361	.374	.349		.362	.352
1924	.443	.456	.436	.450	.399	.502	.437		.420	.414
Southern:										
1907	.130	.130								
1908	.111	.111								
1909	.112	.112								
1910	.129	.128		.130		.131				
1911	.131	.131		.130		.132				
1912	.130	.130		.132		.131				
1913	.140	.136		.152		.138			.142	
1914	.146	.137		.169	.144	.148			.141	
1915	.141	.134		.158	.146	.140			.142	
1917	.222	.226		.221		.217				
1919	.331	.334		.370	.299	.374			.275	
1920	.396	.359		.480	.312	.404			.381	
1922	.253	.257		.296	.219	.283			.222	
1924	.282	.269		.342	.278	.334			.262	

¹ Including earnings of common laborers in rail mills although average earnings for that department are not shown separately in this table. See Bul. 353 for average earnings.

TABLE 5.—AVERAGE EARNINGS PER HOUR OF COMMON LABORERS IN SPECIFIED DEPARTMENTS OF THE IRON AND STEEL INDUSTRY, 1907 TO 1924, BY DISTRICT AND YEAR—Continued

District and year	Average earnings per hour in—									
	All departments	Blast furnaces	Bessemer converters	Open hearth furnaces	Puddling mills	Bloom- ing mills	Plate mills	Bar mills	Sheet mills	Tin- plate mills
All districts:										
1907.....	\$0. 151	\$0. 146	\$0. 155	-----	-----	-----	-----	\$0. 153	-----	-----
1908.....	. 147	. 140	. 155	-----	-----	-----	-----	. 153	-----	-----
1909.....	. 145	. 138	. 151	-----	-----	-----	-----	. 150	-----	-----
1910.....	1. 158	. 150	. 163	\$0. 157	-----	\$0. 162	\$0. 159	. 160	\$0. 164	\$0. 165
1911.....	1. 161	. 151	. 166	. 161	-----	. 163	. 168	. 159	. 166	. 164
1912.....	1. 162	. 162	. 167	. 164	-----	. 163	. 161	. 160	. 168	. 167
1913.....	1. 181	. 173	. 192	. 185	-----	. 185	. 175	. 169	. 190	. 189
1914.....	1. 181	. 177	. 193	. 185	\$0. 173	. 187	. 174	. 173	. 188	. 189
1915.....	1. 180	. 171	. 193	. 186	. 167	. 187	. 174	. 173	. 188	. 190
1917.....	. 298	. 281	. 298	. 292	-----	. 287	. 294	-----	. 331	-----
1919.....	1. 461	. 457	. 489	. 468	. 436	. 469	. 450	. 443	. 462	. 461
1920.....	1. 508	. 474	. 537	. 525	. 457	. 511	. 498	. 506	. 536	. 533
1922.....	1. 336	. 315	. 363	. 354	. 305	. 350	. 336	. 316	. 356	. 359
1924.....	1. 417	. 401	. 448	. 434	. 355	. 462	. 432	. 392	. 420	. 439

¹ Including earnings of common laborers in rail mills although average earnings for that department are not shown separately in this table. See Bul. 353 for average earnings.

² Including earnings of common laborers in rail mills although district earnings for 1924 do not include them.

AVERAGE HOURLY EARNINGS IN DEPARTMENTS, 1924, BY DISTRICT

Table 6 shows by districts the average hourly earnings in 1924 in each department as a whole, all occupations combined. The average was obtained by dividing the total earnings by the total hours worked.

TABLE 6.—AVERAGE HOURLY EARNINGS IN EACH DEPARTMENT, ALL OCCUPATIONS COMBINED, 1924, BY DISTRICT

District	Blast furnaces	Bessemer converters	Open-hearth furnaces	Puddling mills	Bloom- ing mills	Plate mills	Stand- ard rail mills	Bar mills	Sheet mills	Tin- plate mills
Eastern.....	\$0. 496	-----	\$0. 533	\$0. 652	\$0. 594	\$0. 433	-----	\$0. 583	-----	-----
Pittsburgh.....	. 561	\$0. 636	. 642	. 897	. 629	. 609	-----	. 626	\$0. 829	\$0. 843
Great Lakes and Middle West.....	. 576	. 610	. 671	. 717	. 628	. 620	-----	. 613	. 784	. 697
Southern.....	. 380	-----	. 572	. 606	. 506	-----	-----	. 428	-----	-----
Total.....	. 520	. 624	. 635	. 721	. 613	. 562	\$0. 573	. 585	. 809	. 795

The highest hourly earnings are found in the sheet mills and the tin-plate mills, the rolling crews in these mills working in three shifts at high speed and making exceptionally high hourly rates. The remaining rolling mills and the two steel-making departments all fall within a range of approximately 7 cents, the average for the open-hearth furnaces (63.5 cents) being the higher. Earnings in the puddling mills were quite high, the average for the Pittsburgh district (89.7 cents) being higher than the average for any other district in any department. Owing to the preponderance of common labor, or of occupations requiring only very moderate skill, the lowest hourly average (52 cents) is found in blast furnaces.

The Pittsburgh and the Great Lakes and Middle West districts show considerably higher average hourly earnings than the Eastern and Southern districts, in all departments. This condition was

due to the lower rates paid to common labor in the Eastern and the Southern districts. The proportion of common labor and of occupations requiring little skill in nearly every department was sufficient to affect materially the average for all occupations even though there was in many cases much less variation between the rates of highly skilled occupations in the several districts.

SCOPE OF 1924 DATA

In 1924 information was obtained from plants located in 14 States. The plants covered have been grouped into four districts. These districts were established, not strictly on geographical lines, but rather according to similar industrial conditions. The "Eastern" district covers New Jersey and the eastern parts of New York, Pennsylvania, and Maryland. The "Pittsburgh" district includes not only the plants in Pittsburgh proper but also others in western Pennsylvania, those along the border line of Ohio from Youngstown south to Bellaire, and those located in the "Panhandle" of West Virginia. The "Great Lakes and Middle West" district includes plants scattered along the Great Lakes and also some in inland districts, including Colorado. Although this last is a very large territory geographically, it is essentially a unit industrially as far as the iron and steel industry is concerned, the wage rates of the entire district being based largely on those paid in the two producing centers, Buffalo and Chicago. The "Southern" district includes plants in Virginia, Tennessee, Alabama, Kentucky, and the southern part of Ohio. The southern Ohio plants are included in the Southern district because the conditions, both as to wages paid and the general class of labor employed, resemble much more closely the conditions of the Alabama and Kentucky plants than they do those of the other plants of Ohio.

The actual number of plants and of employees covered in each district in each department in 1924 are shown in Table 7. Each department of an establishment has been counted as a separate plant.

TABLE 7.—NUMBER OF PLANTS AND OF EMPLOYEES SHOWN ON PAY ROLLS IN 1924, BY DEPARTMENT AND DISTRICT

Department	Eastern district		Pittsburgh district		Great Lakes and Middle West district		Southern district		Total	
	Plants	Em- ployees	Plants	Em- ployees	Plants	Em- ployees	Plants	Em- ployees	Plants	Em- ployees
Blast furnaces.....	5	1,512	11	4,898	10	5,760	10	3,370	36	15,540
Bessemer converters.....			6	1,894	5	1,563			11	3,457
Open-hearth furnaces.....	5	987	7	4,361	10	4,943	4	1,320	26	11,611
Puddling mills.....	6	1,045	5	1,313	3	515	3	555	17	3,428
Blooming mills.....	5	603	8	2,650	9	1,959	3	437	25	5,649
Plate mills.....	4	1,130	5	2,118	4	986			13	4,234
Standard rail mills.....	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)		7
Bar mills.....	5	704	9	2,686	10	2,136	7	1,039	31	6,564
Sheet mills.....			9	5,787	5	3,903			14	9,690
Tin-plate mills.....			6	7,173	3	3,376			9	10,549
Total.....	30	5,981	66	32,880	59	25,140	27	6,721	189	74,104

¹ Not identified by districts.

EXPLANATION OF TABLES

Following is a brief explanation of the data contained in the five major statistical tables, parts of which appear in each of the sections relating to the several departments.

Table A.—Average customary full-time hours per week, average earnings per hour, and average full-time earnings per week, together with the index numbers computed from these averages, are presented in this table for the principal productive occupations in each department separately. The table also shows the per cent of employees working each classified number of average customary full-time hours per week. Figures for 1924 were compiled for this report, and those for earlier years were taken from previous reports published by this bureau.

The number of employees reported for all years up to and including 1917, with the exception of laborers and those employed in certain other unskilled general positions, is the number of jobs or positions required in each occupation to operate the plants under normal conditions or such units as were operated for the pay period scheduled. For the years 1919, 1920, 1922, and 1924 the actual number of individuals appearing on the pay rolls in all occupations, both skilled and unskilled, have been reported.

The index numbers have been added as an aid in making a comparison of the actual data over a period of years. The index for each year is the per cent that the average for that year is of the average for 1913.

Table B.—A classification showing numbers and percentages of employees according to the number of days, or turns, per week customarily worked is presented in Table B. Figures are shown for employees in all occupations for the years 1914, 1915, 1920, 1922, and 1924. These are the only years in which data covering all employees were collected. No separate tabulation has been made for employees in the principal productive occupations. (See Bul. 353 for figures concerning selected occupations.) The plants are grouped according to the four geographical districts used in this survey, and the number and per cent of employees in each district are shown in the table as well as the total for all districts combined.

In the data for 1924 all employees have been classified as nearly as possible by their regular working time. When an employee worked at two or more occupations during the pay period in which the number of turns, or days, per week differed, the occupation at which he worked the most time was considered to be his regular one, and he has been classified in this table under that occupation only. Gas or repair turns have been disregarded when employees customarily worked such turns at less frequent intervals than once every three weeks, and relief systems have also been omitted in a few instances where the periods elapsing between reliefs were longer than that time.

Table C.—This table presents the most important facts for 1924 relative to the customary working time, actual earnings, and actual hours of employees in the principal productive occupations in each department. The data for each occupation are presented by districts and for all districts combined.

The table shows the number of plants from which data were obtained for the occupation. Next follows the number of positions necessarily filled in those plants. For definition of "position" see page 3.

A plant may have a system of relief whereby a worker in a position may have one day off once a week, once in 10 days, or at longer intervals. In such case, the number of positions remains the same but the number of persons necessary to keep the positions filled is increased by the number of relief substitutes brought in. Further, a man may be away a part of a week because of sickness or business affairs or a man may leave permanently. This means more work for a substitute or an additional substitute. The number of individuals employed in a pay period always equals, and generally considerably exceeds, the number of positions. Thus, the eleventh occupation in blast furnaces, on page 27, shows that in a half month 466 individuals were employed to keep 341 keeper positions filled.

Following the column giving the number of positions, three columns show the average full time of the employees hired to fill the positions. In one plant employees may customarily work 7 days per week, while in another, they may customarily work but 6 days per week, with a substitute coming in on the seventh. In a continuous operation industry the average regular working days of the employees may be 7 per week or less, depending on the amount of regular relief provided.

The second of these columns shows the average number of hours per turn, both of the position and the man who fills the position, as the length of a turn is the same for both man and position. The third column shows the average number of full-time hours per week of the employees in the positions. These averages are computed from the average working time of the employees weighted by the number of positions. The regular working time of an employee may vary from week to week—for example, 6 days and 72 hours in one week and 7 days and 84 hours the next week. In such cases an average of $6\frac{1}{2}$ days and 78 hours for the employee is used in the compilation.

The next section of Table C shows the actual number of employees found engaged in each specified occupation during the pay period taken, classified according to customary full-time hours under which they work. As above stated the number of employees is considerably in excess of the number of positions to be filled, because of additional relief workers and because many employees worked only part of the customary full time of the occupation under consideration.

The average hours worked, average earnings per pay period, and average earnings per hour are based on the total hours and earnings of each employee in each specified occupation as taken from the pay rolls. While these averages refer only to the occupation under consideration, it must not be assumed that the employees in that occupation had no further opportunity for work. A large percentage of the employees did work at more than one occupation during the period scheduled; hence, none of the averages in this table measure the total work or total earnings of the employees. The average earnings per hour were computed by dividing the total actual earnings received for the pay period by the total actual hours worked in each occupation. The average hours worked and the average earnings received for the half-month period have been obtained by dividing the totals in each

case by the actual number of employees engaged in the occupation, subject to the adjustment of pay rolls as described on page 3.

Average full-time earnings per week are computed from the average hourly earnings for the pay period and the average full-time hours per week.

Table D.—Classified hourly earnings are shown in this report for employees in two occupations only in each department. These occupations have been selected as representative of the degree of variation or spread of wages in all occupations. In no case does the same occupation appear in any two departments, except that of rollers, which appears in puddling mills and sheet mills, and that of heaters, which appears in blooming mills and tin-plate mills, and in these departments the duties of the repeated occupations vary so widely that they may be considered two distinct occupations. Exceptionally high or low earnings per hour in practically all occupations indicate that the employees were working under unusual conditions, such as performing work on Sunday at time and one-half rate, or working on a turn which produced exceedingly high or low tonnage.

Table E.—The customary turns and hours worked by employees in the several departments in 1924 are shown in detail in this table. The number of turns per week, hours per turn, hours per week, and average hours per week are presented for three groups of employees: Those who work day turns only, those who work night turns only, and those who alternate or rotate from day to night shift. Data are shown for each district and all districts combined.

The order of arrangement begins with the highest number of average full-time hours per week. As the number of hours worked per day seldom varies during the period Monday to Friday, hours per turn are shown but once under that heading. The hours worked on Saturday and Sunday, however, often differ from the number worked during the first five days of the week, and hours are shown separately for both Saturday and Sunday.

As in Table B, an employee who worked at two or more occupations during the pay period in which the number of turns, or days, per week differed, the occupation at which he worked the most time was considered to be his regular one, and he has been classified in this table under that occupation alone. Gas or repair turns have been disregarded when employees customarily work such turns at less frequent intervals than once every three weeks in the case of 3-shift workers and once every four weeks for 2-shift employees. Relief systems have also been omitted in a few instances where the periods elapsing between reliefs were longer than that time.

The brackets appearing in the table have been used to indicate a working cycle; that is, employees working on shifts which have been bracketed customarily alternate or rotate from one shift to another until they have spent one week on each shift included. The three 8-hour turns per day are shown as one day turn and two night turns—this for the reason that only one of the three turns is an all daylight turn, the other two either beginning or ending in the night.

In some instances in the table hours are reported for the seven days of the week, yet the number of days worked are reported as six. This is owing to the fact that the figures are for a seven-day occupation wherein each employee was relieved one day in seven. Either relief was not always on the same day each week or information as

to which day was not available; therefore, the hours for all days have been shown and the relief indicated in the full-time hours per week.

The table shows the extent of regular relief systems and their working but it must not be assumed that there was no chance for rest where such has not been shown. In some plants, while there is no *regular* system of relief, the employees are not held strictly to the working-days of the plant and may often take a day off as they desire it, the plant putting another man in the place of the one absent. As it was impossible to determine when or how often a man might be *excused*, such plants have been treated in this table as though no relief was granted.

Workmen whose labor is continuous and who are subjected to high temperatures usually have spell hands—that is, three men work on a two-man position or two men work on a one-man position, which arrangement allows each man in rotation intervals for rest. Such intervals of rest are considered as time on duty.

BLAST FURNACES

Data for 1924 were collected from the pay rolls of 36 blast furnaces and cover 15,540 employees in all occupations. Companies generally were operating a greater number of stacks than in 1920 or 1922, which accounts for the increase in number of employees over the number in those years. Of the 15,540 employees reported, 8,738 are found in the principal productive occupations for which separate figures are given. Data were first obtained for this department in 1907, and comparative figures are presented for the period 1907 to 1924.¹

The year 1924 marks the lowest point of full-time hours per week in the blast furnaces in the period 1907 to 1924. Up until the summer of 1923 this department, while showing a gradual decrease from former years in the hours of labor of employees as a whole, was still largely on a 12-hour basis and some employees also worked 7 days per week. A general reduction in the working time of employees, however, took place in the latter part of 1923, and a large number of the plants adopted the 8-hour day for all employees. Considering the principal productive occupations as a whole, average full-time hours per week in 1924 were 19 per cent less than in 1922 and 25 per cent less than in 1913.

The study also shows there was a large increase in earnings per hour in 1924 as compared with any other year for which data are presented, except 1920. Hourly earnings in that year were unusually high and were 10 per cent greater in the principal productive occupations combined than in 1924. The 1924 hourly earnings, however, were 33 per cent above those in 1922 and 154 per cent above those in 1913; in other words, more than 2½ times the hourly earnings of 1913.

The increase in hourly earnings was more than enough to compensate for the reduction of hours, and weekly earnings in 1924 still show an increase as compared with all other years except 1919 and 1920.

The most significant facts concerning average earnings and average hours in each of the principal productive occupations of blast furnaces are shown in Table A (1). While the customary working time of the 16 occupations combined was 19 per cent less in 1924 than in 1922, when considered separately decreases in the average full-time hours per week ranged from 4.7 hours per week for iron handlers and loaders to 18.6 hours for bottom fillers.

Bottom fillers customarily worked 84 hours per week in 1907 and continued to do so until 1912 when the average was reduced to 82.2 full-time hours and remained at practically that level until 1917, when owing to war necessity they were again advanced to 84. In 1919 hours dropped back to 82.2. The system of regularly relieving men on a 7-day job of 12 hours per day in this occupation was first noticeable to any appreciable extent in 1920, and employees customarily worked but 67.1 hours per week on the average in that year. In 1922 the average was increased to 72.8, but in 1924 dropped to the new low average of 54.2 hours. Lesser but similar changes took place in the other occupations.

¹ No data were collected for the years 1916, 1918, 1921, and 1923.

Average earnings per hour increased in each of the 16 selected occupations in 1924 as compared with 1922 and all other years except 1919 and 1920. The 1920 figures are higher than those in 1924 for each occupation except blowers, and the averages in 1919 are greater in some occupations but lower in others. For example, the average earnings per hour of laborers, which occupation comprises about three-fourths of the employees in the principal productive occupations, was less than 20 cents per hour, 1907 to 1915, but in 1917 earnings were advanced to an average of 28.1 cents per hour. The increase was carried into 1919 and 1920, the averages for those years being 45.7 and 47.4, respectively. In 1922 the average dropped back to 31.5 cents per hour but was increased in 1924 to 40.1 cents. Table A (1) shows like figures for the other occupations as well.

Average full-time earnings per week are below those for 1919 and 1920 for each occupation, but show increases over those for all other years.

The distribution of employees according to their full-time hours per week, contained in Table A (1), shows the extent to which full-time hours have been reduced in 1924, as compared with other years, in this department. In all previous years only a small per cent of the employees had a week of less than 60 hours, while in 1924 only a small number of the employees in any occupation had a working week of as many as 60 hours.

Index numbers for full-time hours per week, earnings per hour, and full-time earnings per week are also contained in Table A (1). These are simply percentages computed from the averages presented in the table, using the average for 1913 as the base or 100 per cent. The index numbers for the department as a whole (all principal productive occupations combined) are shown on page 4.

TABLE A (1).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—BLAST FURNACES

[For explanation of this table see p. 13]

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—						
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under 60	Over 48 and under 60	60	Over 60 and under 72	72	Over 72 and under 84	84
Stockers:															
1907.....	18	824	81.4	\$0.170	\$13.83	104	89	92			2	9		13	77
1908.....	18	473	79.1	.157	12.43	101	82	83			1	26		15	58
1909.....	18	737	80.9	.158	12.75	104	82	85				10		30	60
1910.....	32	1,445	79.9	.164	13.17	102	85	88		(1)	1	18	2	15	63
1911.....	32	904	79.7	.168	13.40	102	88	89			1	3	12	7	62
1912.....	34	1,069	78.8	.171	13.46	101	89	90			1	2	10	13	23
1913.....	33	1,269	78.0	.192	15.00	100	100	100			1	3	18	12	22
1914.....	35	1,031	74.9	.188	14.03	96	98	98			3	4	27	21	16
1915.....	35	878	74.6	.188	13.99	96	98	98			2	5	27	22	17
1917.....	14	441	77.4	.295	22.79	99	154	152					3	47	9
1919.....	20	1,043	78.1	.465	36.32	100	242	242			13	(1)	6	6	8
1920.....	27	1,624	75.5	.527	39.68	97	274	265			10	1	5	16	49
1922.....	31	1,316	74.4	.352	26.06	95	183	174			3	1	10	40	24
1924.....	36	1,774	60.5	.465	28.10	78	242	187			5	58	7	17	5

¹ Less than 1 per cent.

TABLE A (1).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—BLAST FURNACES—Continued

Occupation and year	Number of plants	Number of employes	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—									
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84					
Bottom fillers:																		
1907	7	293	84.0	\$9.160	\$13.40	102	95	97					100					
1908	7	194	84.0	.150	12.59	102	89	91					100					
1909	7	232	84.0	.138	11.61	102	82	84					100					
1910	14	672	84.0	.152	12.77	102	89	92					100					
1911	15	417	84.0	.149	12.50	102	89	90					100					
1912	15	468	82.2	.152	12.53	100	90	90			15		85					
1913	13	469	82.1	.168	13.88	100	100	100			16		84					
1914	13	360	82.0	.167	13.76	100	99	99			17		83					
1915	9	148	82.4	.176	14.48	100	105	104			14		86					
1917	3	56	84.0	.270	22.68	102	161	163					100					
1919	4	72	82.2	.466	35.84	100	260	258				31	69					
1920	6	249	67.1	.588	38.35	82	338	276	42		25		35					
1922	7	311	72.8	.386	24.44	89	200	176	16		53		31					
1924	6	341	54.2	.490	26.01	66	286	187	100									
Top fillers:																		
1907	8	66	84.0	.177	14.86	105	93	98					100					
1908	8	44	84.0	.168	14.15	105	88	93					100					
1909	8	50	84.0	.181	13.56	105	84	89					100					
1910	13	142	82.8	.169	13.85	103	88	91	4				95					
1911	14	92	82.2	.171	13.84	102	90	91	7				93					
1912	14	96	80.0	.175	13.81	100	92	91					75					
1913	14	98	80.3	.191	15.19	100	100	100	6		19		78					
1914	13	80	80.1	.199	15.71	100	104	103	8		15		78					
1915	8	44	79.0	.213	16.44	98	112	108	14		9		77					
1917	3	22	84.0	.287	21.57	105	135	142					100					
1919	4	28	76.7	.468	35.90	96	245	236	21		21		67					
1920	6	74	71.2	.573	39.72	89	300	261	27		24		49					
1922	7	96	68.8	.388	26.02	86	203	171	27		53		20					
1924	7	111	56.8	.544	30.40	71	285	200	90		1		9					
Larry men:																		
1907	11	132	84.0	.195	16.41	102	90	92					100					
1908	11	86	84.0	.184	15.48	102	85	87					100					
1909	11	135	84.0	.186	15.64	102	86	88					100					
1910	21	231	84.0	.196	16.47	102	90	93					100					
1911	21	203	82.9	.194	15.99	101	89	90			9		91					
1912	23	241	78.2	.199	15.46	95	92	87	15		14		71					
1913	23	238	82.3	.217	17.77	100	100	100			14		86					
1914	27	192	78.6	.215	16.38	96	99	95			43	4	63					
1915	27	212	78.6	.211	16.51	96	97	93			43	4	63					
1917	14	133	77.2	.327	25.14	94	151	141			55	4	41					
1919	13	286	80.4	.542	43.58	98	250	245	6		9	12	73					
1920	24	369	73.8	.586	42.65	90	270	240	17		21	36	27					
1922	27	340	75.1	.402	29.96	91	185	169	4		58	15	22					
1924	32	502	57.7	.548	31.48	70	253	177	7	82		3	7					
Larry men's helpers:																		
1907	10	115	84.0	.159	13.35	102	83	85					100					
1908	10	79	84.0	.152	12.80	102	80	81					100					
1909	10	135	84.0	.149	12.53	102	78	79					100					
1910	19	278	84.0	.165	13.88	102	86	88					100					
1911	19	294	82.6	.168	13.89	100	88	88			12		88					
1912	23	359	79.6	.172	13.64	96	90	87	10		14		76					
1913	23	352	82.6	.191	15.78	100	100	100			11		89					
1914	27	250	78.6	.187	14.67	95	98	93			43	3	54					
1915	27	275	78.3	.185	14.43	95	97	91		(1)	46	3	51					
1917	12	161	79.6	.292	23.20	96	153	147			34	5	60					
1919	13	310	79.3	.491	36.94	96	267	247	10		9	13	68					
1920	19	517	73.9	.631	39.09	89	278	248	8		10	16	55					
1922	24	383	74.9	.356	26.40	91	186	167	4	(1)	3	56	14					
1924	26	627	57.1	.485	27.38	69	254	174	16	74	1	8	6					

¹ Less than 1 per cent.

TABLE A (1).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—BLAST FURNACES—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers. (1913=100)			Per cent of employees whose average full-time hours per week were—				
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84
Skip operators:													
1907	11	86	84.0	\$0.193	\$16.19	101	89	90					100
1908	11	64	84.0	.184	15.49	101	85	87					100
1909	11	94	84.0	.183	15.40	101	84	86					100
1910	19	125	84.0	.197	16.56	101	91	92					100
1911	19	124	83.8	.198	16.60	101	91	92				2	98
1912	20	138	79.3	.206	16.19	96	95	90	13			9	78
1913	22	158	82.9	.217	17.97	100	100	100					91
1914	28	139	79.5	.214	16.98	96	99	94				35	60
1915	28	152	79.4	.215	17.08	96	99	95				36	59
1917	13	118	77.3	.343	26.52	93	158	148				56	44
1919	19	169	80.4	.536	43.09	97	247	240	5			15	67
1920	22	217	73.4	.694	43.30	89	274	241	18			28	28
1922	25	220	75.8	.401	30.20	91	185	168	3			53	29
1924	30	320	57.5	.643	30.98	69	260	172	10	78			7
Blowers:													
1907	18	78	84.0	.300	25.17	102	90	93					100
1908	18	68	84.0	.283	23.74	102	85	87					100
1909	18	86	84.0	.286	24.04	102	86	88					100
1910	32	131	83.5	.296	24.74	102	89	91		2			98
1911	33	123	82.9	.305	25.21	101	92	93				9	91
1912	34	139	80.3	.315	25.01	98	95	92		6		16	78
1913	34	154	82.2	.332	27.21	100	100	100				15	85
1914	38	143	80.7	.333	26.74	98	100	98			1	25	69
1915	38	149	80.6	.336	26.93	98	101	99				26	69
1917	18	84	77.8	.485	37.50	95	146	138				49	44
1919	24	134	79.8	.755	60.25	97	227	221	7			10	68
1920	28	198	73.2	.868	62.87	89	261	231	5	15		22	34
1922	32	195	72.4	.978	49.00	88	204	180		11		62	12
1924	36	262	58.3	.989	51.73	71	268	190	11	71		6	7
Blowing engineers:													
1907	20	100	84.0	.242	20.30	102	93	95					100
1908	20	85	84.0	.235	19.77	102	90	93					100
1909	20	103	84.0	.230	19.35	102	88	91					100
1910	34	153	84.0	.243	20.39	102	93	96					100
1911	35	137	82.9	.244	20.15	101	94	95				9	91
1912	35	142	80.6	.249	19.93	98	96	94		4		18	77
1913	35	156	82.0	.260	21.28	100	100	100				17	83
1914	38	147	79.3	.262	20.64	97	101	97				37	6
1915	38	153	79.1	.262	20.64	96	101	97				39	6
1917	18	122	76.1	.391	29.61	93	150	139				64	36
1919	24	143	80.0	.628	50.24	98	242	236		7		12	10
1920	28	164	73.7	.720	52.50	90	277	247		16		29	25
1922	32	213	74.2	.483	35.49	90	185	167		5		62	18
1924	36	244	58.7	.661	38.65	72	254	182	7	80			3
Blowing engineers' assistants:													
1907	11	67	84.0	.203	17.02	101	90	91					100
1908	11	51	84.0	.199	16.72	101	88	90					100
1909	11	74	84.0	.191	16.08	101	85	86					100
1910	18	94	84.0	.207	17.38	101	92	93					100
1911	18	91	83.2	.205	17.06	100	91	91				7	98
1912	18	108	80.4	.211	16.85	97	94	90		8		10	81
1913	18	94	83.2	.225	18.67	100	100	100				6	94
1914	21	99	79.0	.223	17.57	95	99	94				8	12
1915	21	96	78.3	.223	17.41	94	99	93				42	18
1919	17	130	79.1	.565	44.69	95	251	239		7		17	15
1920	22	189	71.7	.632	45.24	86	281	242		20		80	25
1922	24	213	73.5	.424	31.08	88	188	166		6		67	16
1924	26	307	56.2	.584	32.74	68	260	175	7	87			3

* Including 1 per cent whose full-time hours per week were 91.

TABLE A (1).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—BLAST FURNACES—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—				
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84
Stove tenders:													
1907.....	20	140	84.0	\$0.192	\$16.10	103	91	93					100
1908.....	20	96	84.0	.185	15.52	103	88	90					100
1909.....	20	140	84.0	.191	15.22	103	86	88					100
1910.....	34	200	84.0	.193	16.21	103	91	94					100
1911.....	35	180	82.7	.190	15.68	101	90	91					89
1912.....	36	214	79.5	.195	15.38	97	82	89	8		15		74
1913.....	35	220	81.9	.211	17.30	100	100	100			17		83
1914.....	38	183	79.7	.209	16.56	97	99	96			35	7	61
1915.....	38	186	79.4	.208	16.46	97	99	95			35	6	58
1919.....	24	204	80.3	.528	42.40	98	250	245	4		14	15	67
1920.....	28	297	73.7	.592	43.38	90	281	251	19		21	34	66
1922.....	32	279	75.2	.403	30.08	92	191	174	4		61	12	23
1924.....	36	473	67.5	.545	31.36	70	258	181	8	82		3	7
Keepers:													
1907.....	20	146	84.0	.218	18.34	102	83	95					100
1908.....	20	96	84.0	.210	17.68	102	89	92					100
1909.....	20	141	84.0	.205	17.26	102	87	96					100
1910.....	34	201	84.0	.215	18.09	102	91	94					100
1911.....	85	184	82.7	.217	17.95	101	92	93			11		89
1912.....	36	218	79.6	.223	17.59	97	95	91	8		17		74
1913.....	35	230	82.0	.235	19.28	100	100	100			17		83
1914.....	38	184	79.6	.238	18.47	97	99	96			34	7	60
1915.....	38	187	79.4	.232	18.33	97	99	95			35	6	58
1917.....	18	162	77.4	.344	26.55	94	146	138			52	7	41
1919.....	24	203	80.6	.562	45.30	98	239	235	4		11	14	70
1920.....	28	280	73.3	.635	46.45	90	270	241	18		24	34	25
1922.....	32	288	75.3	.420	31.47	92	179	163	4		58	13	25
1924.....	36	466	67.1	.579	32.79	70	246	170	9	81		3	7
Keepers' helpers:													
1907.....	20	616	84.0	.165	13.89	102	89	91					100
1908.....	20	409	84.0	.160	13.41	102	86	88					100
1909.....	20	596	84.0	.155	13.04	102	93	85					100
1910.....	34	877	84.0	.168	14.13	102	90	92					100
1911.....	35	742	83.1	.167	13.84	101	90	90			8		92
1912.....	36	870	80.2	.173	13.75	98	93	90	8		14		78
1913.....	35	950	82.2	.186	15.31	100	100	100			15		85
1914.....	38	734	80.6	.185	14.83	98	99	97			28	7	66
1915.....	38	727	80.1	.182	14.48	97	98	95			30	5	65
1917.....	18	392	77.6	.292	22.59	94	157	148			55	9	36
1919.....	24	650	80.2	.480	38.50	98	258	251	6		13	10	71
1920.....	28	1,168	74.5	.522	38.60	91	281	252	15		3	22	30
1922.....	32	1,178	75.3	.349	26.16	92	188	171	4		2	56	11
1924.....	36	1,654	68.6	.475	27.85	71	255	182	9	76	2	4	10
Iron handlers and loaders:													
1907.....	9	203	73.2	.193	14.20	101	88	88			60		6
1908.....	9	163	73.0	.190	13.95	101	86	87			60		9
1909.....	9	242	73.6	.177	13.05	102	80	81			57		7
1910.....	18	305	74.2	.194	14.36	102	88	89			59		6
1911.....	19	308	73.0	.195	14.17	101	89	88			61		6
1912.....	19	406	73.1	.206	15.11	101	94	94		1	61	9	4
1913.....	19	446	72.5	.220	16.07	100	100	100		2	8	47	9
1914.....	16	333	71.5	.222	16.09	99	101	100	5	4	11	37	8
1915.....	16	323	74.0	.204	15.22	102	93	95		2	3	53	2
1917.....	4	106	71.4	.243	17.44	98	110	109			85	6	9
1919.....	4	94	72.9	.361	26.32	101	164	164		2	71	11	16
1920.....	8	260	72.2	.443	32.00	100	201	199		3	1	60	15
1922.....	8	386	70.4	.307	21.67	97	140	135		12	37	49	2
1924.....	7	283	65.7	.345	22.67	91	157	141			95		5

TABLE A (1).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—BLAST FURNACES—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—				
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	60 and under 72	Over 72 and under 84	84
Pig-machine men:													
1907.....	9	193	84.0	\$0.167	\$14.03	103	87	89	-----	-----	-----	-----	100
1908.....	9	157	83.9	.163	13.69	102	85	87	-----	-----	-----	-----	2
1909.....	9	152	83.9	.162	13.57	102	84	86	-----	-----	-----	-----	2
1910.....	16	291	83.9	.169	14.14	102	88	90	-----	(1)	(1)	-----	99
1911.....	17	267	82.4	.169	13.98	101	88	89	-----	-----	-----	12	87
1912.....	17	275	81.9	.171	13.97	100	89	89	-----	(1)	(1)	-----	17
1913.....	19	303	81.9	.192	15.72	100	100	100	-----	(1)	(1)	-----	17
1914.....	21	259	79.2	.192	15.15	97	100	96	-----	(1)	(1)	-----	36
1915.....	21	245	79.6	.190	15.07	97	99	96	-----	(1)	(1)	-----	1
1917.....	10	154	77.9	.300	23.21	95	156	143	-----	-----	-----	50	3
1919.....	18	370	80.5	.477	38.40	98	243	244	-----	9	-----	-----	4
1920.....	21	390	72.2	.552	39.63	88	288	252	-----	25	-----	-----	23
1922.....	23	383	73.1	.380	27.73	89	198	176	-----	12	1	-----	58
1924.....	26	634	67.5	.515	29.52	70	268	188	-----	12	78	-----	2
Cinder men:													
1907.....	20	262	83.6	.173	14.46	105	97	101	-----	-----	-----	2	10
1908.....	20	245	82.6	.156	12.88	103	87	90	-----	-----	-----	-----	8
1909.....	20	380	82.2	.150	12.34	103	84	86	-----	-----	-----	-----	9
1910.....	32	482	82.9	.163	13.56	104	91	95	-----	(1)	(1)	-----	7
1911.....	32	339	81.3	.158	12.84	102	88	90	-----	-----	-----	-----	10
1912.....	32	397	75.2	.164	12.20	94	92	85	-----	17	6	11	9
1913.....	33	380	79.9	.179	14.27	100	100	100	-----	1	12	15	7
1914.....	31	286	78.3	.176	13.78	98	98	97	-----	3	13	27	(1)
1915.....	31	254	78.6	.174	13.64	98	97	96	-----	4	2	9	24
1917.....	13	168	78.4	.286	22.31	98	160	156	-----	-----	-----	-----	44
1919.....	21	295	77.2	.473	36.52	97	264	256	-----	14	-----	7	9
1920.....	23	87	68.4	.557	37.85	86	311	265	-----	3	34	-----	2
1922.....	24	216	71.6	.390	27.76	90	218	195	-----	13	10	4	38
1924.....	22	364	69.7	.483	28.71	75	270	201	-----	6	53	18	21
Laborers:													
1907.....	20	957	75.8	.146	11.13	105	85	90	-----	-----	11	37	(1)
1908.....	20	718	72.8	.140	10.24	100	82	82	-----	-----	20	38	-----
1909.....	20	757	73.0	.138	10.17	101	81	82	-----	-----	13	50	2
1910.....	34	1,423	74.7	.150	11.23	103	88	90	-----	-----	19	28	2
1911.....	35	937	73.3	.151	11.14	101	88	90	-----	-----	21	31	3
1912.....	35	1,049	73.1	.152	11.15	101	89	90	-----	-----	20	30	10
1913.....	35	1,273	72.5	.171	12.43	100	100	100	-----	(1)	22	34	10
1914.....	37	1,096	70.8	.177	12.52	98	104	101	-----	(1)	35	12	21
1915.....	37	885	71.3	.171	12.20	98	100	98	-----	2	29	16	19
1917.....	17	698	75.3	.281	21.23	104	164	171	-----	-----	16	12	22
1919.....	24	2,184	77.9	.457	35.60	107	267	286	-----	4	8	11	5
1920.....	27	1,770	72.3	.474	34.60	100	277	278	-----	11	8	24	7
1922.....	32	1,500	67.7	.315	21.69	93	184	174	-----	5	29	16	34
1924.....	36	2,059	62.4	.401	25.15	86	235	202	-----	(1)	25	17	54

¹ Less than 1 per cent.

² Including 1 per cent whose full-time hours per week were 91.

³ Including less than 1 per cent whose full-time hours per week were 91.

The customary working time per week of all employees covered in blast furnaces in each of the 5 years, 1914, 1915, 1920, 1922, and 1924,³ has been classified, and the number and per cent of employees coming under each classification are shown in Table B (1).

As a blast furnace is in continuous operation, the amount of 7-day work among employees varies according to the prevalence of the system for relieving employees 1 day each week, 1 day every two weeks, 1 day every three weeks, or some such period. By 1914 this plan had made considerable progress, and in the country as a whole

³ These 5 years are the only ones in which data were collected covering all principal productive and other occupations.

53 per cent of the employees reported for that year worked 7 days per week regularly. This percentage remained practically unchanged during the years 1915 and 1920. In 1922, however, provision was made for the relief of employees in practically all plants and only 29 per cent worked 7 days each week. Employees were regularly relieved with much less frequency in 1924, and this survey shows 45 per cent of all employees working a 7-day week regularly. This increase in 7-day work, however, is due in large measure to the elimination of the 12-hour day in many plants and the substitution of the shorter shifts of from 8 to 10 hours.

The combination of 6 days, 7 days, and 7 days in rotation appears in this department for the first time in 1924 and 30 per cent of all employees worked that number of turns. This combination was brought about by plants adopting the three 8-hour shifts and giving employees a relief turn once every three weeks. This practice had been customary in some of the other departments, sheet mills and tin-plate mills especially, for many years, but was found in this department for the first time in 1924.

TABLE B (1).—NUMBER AND PER CENT OF EMPLOYEES WHO CUSTOMARILY WORKED EACH SPECIFIED NUMBER OF DAYS PER WEEK, 1914 TO 1924, BY DISTRICT AND YEAR—BLAST FURNACES

[For explanation of this table see p. 13]

District and year	Number of plants	Number of employees	Number of employees whose customary working days per week were—				Per cent of employees whose customary working days per week were—			
			6	6 and 7 alternately	6, 7, and 7 in rotation	7	6	6 and 7 alternately	6, 7, and 7 in rotation	7
Eastern:										
1914.....	6	1,078	354	46	-----	678	33	4	-----	63
1915.....	6	794	256	5	-----	533	32	1	-----	67
1920.....	3	642	137	-----	-----	505	21	-----	-----	79
1922.....	4	885	171	180	-----	534	19	20	-----	60
1924.....	5	1,512	150	179	10	1,173	10	12	1	78
Pittsburgh:										
1914.....	10	3,298	1,466	405	-----	1,427	44	12	-----	43
1915.....	10	3,176	1,470	316	-----	1,390	46	10	-----	44
1920.....	8	4,916	1,550	1,473	-----	1,893	32	30	-----	39
1922.....	9	3,481	1,947	811	-----	723	56	23	-----	21
1924.....	11	4,898	519	411	2,278	1,690	11	8	47	35
Great Lakes and Middle West:										
1914.....	11	3,172	1,833	13	-----	1,286	59	(¹)	-----	41
1915.....	11	2,761	1,643	13	-----	1,115	60	(²)	-----	40
1920.....	9	3,871	743	643	-----	2,480	19	17	-----	64
1922.....	10	3,383	2,064	473	-----	846	61	14	-----	25
1924.....	10	5,760	1,052	132	1,454	3,122	18	2	25	54
Southern:										
1914.....	11	1,705	198	-----	-----	1,507	12	-----	-----	88
1915.....	11	1,832	230	-----	-----	1,602	13	-----	-----	87
1920.....	8	2,741	1,104	-----	-----	1,637	40	-----	-----	60
1922.....	9	2,967	1,932	36	-----	999	65	1	-----	34
1924.....	10	3,370	1,454	73	846	997	43	2	25	30
All districts:										
1914.....	38	9,253	3,901	454	-----	4,898	42	45	-----	53
1915.....	38	8,563	3,599	324	-----	4,640	42	44	-----	54
1920.....	28	12,170	3,534	2,121	-----	6,515	29	17	-----	54
1922.....	32	10,716	6,114	1,500	-----	3,102	57	14	-----	29
1924.....	36	15,540	3,175	795	4,588	6,982	20	5	30	45

¹ Customary working days per week were 6, 6, and 7, in rotation.

² Less than 1 per cent had customary working days per week of 6, 6, and 7, in rotation.

³ Includes 3 employees whose customary working days per week were 6, 6, and 7, in rotation.

⁴ Including less than 1 per cent whose customary working days per week were 6, 6, and 7, in rotation.

Table C (1) presents the most significant facts relative to earnings and hours of labor of employees in the principal productive occupations in the 36 blast furnaces covered in 1924. The occupations have been arranged as nearly as possible in the order of production, and figures are shown for each district and all districts combined for each occupation.

Referring to the first occupation presented, stockers, the 1,060 positions were kept filled by a total of 1,774 men during the pay period scheduled. As stated, on page 14, in the explanation of this table, many of the employees worked only part time in this occupation, and 1,774 men were necessary to keep the 1,060 positions filled. However, it must not be assumed that these employees worked only as stockers during the period. A large percentage of them worked in other occupations, and the number of employees shown in the separate occupations in the following table can not be combined as the number of employees who worked in the principal productive occupations in this department.

The average customary full time of the 1,774 men working in the 1,060 positions was 6.7 turns per week, 9 hours per turn, and 60.5 hours per week. These averages are for all districts combined and do not show the extreme range of the figures for the several districts. The average full-time hours per week in the Great Lakes and Middle West district, for example, was only 55.7, while in the Eastern district the average was 72.8 hours.

In the distribution of the customary working time of the 1,774 employees, 1,110, or 63 per cent, when working full time worked 56 hours per week or less, while the remaining 664, or 37 per cent, ranged from 60 to 84 hours per week.

The average hourly earnings of stockers ranged from 32.1 cents in the Southern district to 52 cents in the Great Lakes and Middle West district, with an average of 46.5 cents for all districts combined. Average earnings for the half-month period reached the high point in the Eastern district, \$53.62, owing to the fact that employees in that district worked more hours at this occupation than those in any of the other three districts, or an average of 111.1 hours. In the Great Lakes and Middle West district employees averaged only 70.1 hours in this occupation during the 16-day period and received an average of \$36.41 for that time. These averages are only for the occupation under consideration and do not include earnings that employees may have made in other occupations during the same pay period.

The range for average full-time earnings per week of stockers was from \$22.43 in the Southern district to \$35.14 in the Eastern district. The average for all districts was \$28.10.

TABLE C (1).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND DISTRICT—BLAST FURNACES—Continued

Occupation and district	Number of plants	Positions			Employees working in scheduled pay period (16 days) at specified occupation											Average full-time earnings per week					
		Number	Average customary full time of employees in the positions			Number	Number whose customary full-time hours per week were—								Average hours worked		Average earnings in pay period	Average earnings per hour			
			Turns per week	Hours per turn	Hours per week		48	Over 48 and under 56	56	Over 56 and under 60	60	Over 60 and under 72	72	Over 72 and under 84					84 and over		
Skip operators:																					
Eastern.....	5	40	7.0	9.0	62.7	47			36							3	8	122.1	\$62.63	\$0.513	\$32.16
Pittsburgh.....	11	108	6.8	8.1	54.9	119	33	36	48								2	115.4	66.88	.580	31.83
Great Lakes and Middle West.....	8	81	6.9	8.0	55.1	100		47	53									103.4	60.86	.589	32.26
Southern.....	6	34	6.6	9.9	65.6	54		30								11	13	99.4	38.95	.392	25.72
Total.....	30	263	6.8	8.4	57.5	320	33	113	137							14	23	109.9	59.66	.543	30.98
Blowers:																					
Eastern.....	5	20	6.7	9.4	62.5	21		6	8				2	3	2			134.1	102.17	.762	47.63
Pittsburgh.....	11	67	6.8	8.4	56.5	83	22	31	17			9	2		2			103.3	100.04	.969	54.73
Great Lakes and Middle West.....	10	84	6.8	8.0	54.7	104	6	43	55									103.0	101.84	.988	54.07
Southern.....	10	41	6.6	10.0	66.3	54		25				6		8	15			116.9	77.95	.667	44.20
Total.....	36	212	6.8	8.6	58.3	262	28	105	80			15	4	11	19			108.5	96.37	.889	51.73
Blowing engineers:																					
Eastern.....	5	21	7.0	9.6	67.4	24			13					3	8			132.4	75.79	.572	38.57
Pittsburgh.....	11	59	6.8	8.1	55.3	75	16	32	25						2			102.6	72.45	.705	38.66
Great Lakes and Middle West.....	10	75	6.9	8.0	55.5	97		26	71									98.7	76.05	.770	42.60
Southern.....	10	34	6.7	9.9	66.6	48		24	3						5	16		111.6	50.57	.453	30.19
Total.....	36	189	6.9	8.6	58.7	244	16	82	112					8	26			105.7	69.91	.661	38.65
Blowing engineers' assistants:																					
Eastern.....	3	9	6.9	10.7	73.3	11			3					4	4			127.2	59.90	.471	34.51
Pittsburgh.....	8	102	6.7	8.0	53.9	140	22	87	31									91.7	54.79	.597	32.20
Great Lakes and Middle West.....	10	84	6.9	8.0	55.5	122		43	79									87.5	56.63	.647	35.93
Southern.....	5	23	6.6	9.4	61.9	34		23						5	6			97.1	36.04	.371	22.98
Total.....	26	218	6.8	8.3	56.2	307	22	153	113					9	10			91.9	53.63	.584	32.74

Table D (1) shows the number of employees and the average and classified earnings per hour of keepers and laborers in 1924 by districts and for all districts combined. These two occupations are selected as representative of the spread or variation in hourly earnings within the occupations in this department.

The average hourly earnings for keepers in the several districts was 57.9 cents and for laborers, 40.1 cents. The range of earnings in the Eastern, Pittsburgh, and Great Lakes and Middle West districts was considerably above that in the Southern district in both occupations.

TABLE D (1).—AVERAGE AND CLASSIFIED EARNINGS PER HOUR IN TWO SELECTED OCCUPATIONS, 1924, BY DISTRICT—BLAST FURNACES

[For explanation of this table see p. 15]

Occupation and district	Number of employees	Average earnings per hour	Number of employees whose earnings per hour were—									
			18 and under 20 cts.	20 and under 25 cts.	25 and under 30 cts.	30 and under 35 cts.	35 and under 40 cts.	40 and under 45 cts.	45 and under 50 cts.	50 and under 60 cts.	60 and under 70 cts.	70 and under 80 cts.
KEEPERS												
Eastern.....	56	\$0.530							9	46	1	
Pittsburgh.....	154	.647								4	150	
Great Lakes and Middle West.....	167	.619								75	83	9
Southern.....	89	.405		5	3	13	9	27	27			5
Total.....	466	.579		5	3	13	9	27	36	125	234	14
LABORERS												
Eastern.....	178	.394					94	81	1	1	1	
Pittsburgh.....	691	.451						425	4	260	1	1
Great Lakes and Middle West.....	697	.456					1	474	55	164	1	2
Southern.....	493	.269	29	193	110	155	3	3				
Total.....	2,059	.401	29	193	110	155	98	983	60	425	3	3

The customary turns per week and hours per turn and per week, together with the average full-time hours per week, of employees in the blast furnaces are shown in detail, by districts and for all districts combined, for the year 1924 in Table E (1). The information was obtained from 36 representative plants and covers 15,540 employees in all occupations.

The table shows the customary number of day turns and night turns per week and the corresponding hours for each turn for each day of the week as well as the full-time hours per week. Employees are divided into three groups, as follows: (a) Those who work days only, (b) those who work nights only, and (c) those who alternate or rotate weekly from one shift to another. The order of arrangement begins with the highest average full-time hours per week.

Gas or repair turns have been disregarded when employees customarily work such turns at less frequent intervals than once every three weeks on a 3-turn basis or once every four weeks on a 2-turn basis. In a few instances relief systems also have been omitted where the periods elapsing between reliefs were longer than three or four weeks.

In some instances in the table hours are reported for 7 days, yet the number of days worked is given as 6. This is owing to the fact that it is a 7-day occupation wherein each employee was relieved 1 day in 7 with no information available, however, as to which day; therefore, the hours for all days have been shown and the relief indicated in the full-time hours per week.

In the main the table is believed to be clear, but some points will need explanation. The first line of the table shows that in the plants canvassed 1 man in the Eastern district was found on a day job requiring him to work 7 days per week and 14 hours per day—a total of 98 hours per week. The bracketed fourth and fifth lines indicate that 7 men alternated from 6 days of 12 hours one week to 7 days of 12 hours the next week, making an average of 78 hours per week.

In the third section of the table the first line shows that 38 men in the Eastern district alternated from 7 turns of 10 hours on day work to 7 turns of 14 hours on night work, averaging 84 hours per week. The fourth and fifth lines of this section show 91 men going from 6 day turns of 12 hours to 7 night turns of 12 hours, followed by 7-day turns of 12 hours and then 6 night turns of 12 hours, making an average of 78 hours of labor per week.

When there are three 8-hour turns the second and third are tabulated as night turns.

TABLE E (1).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—BLAST FURNACES

[For explanation of this table see p. 15]

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district				
Turns per week	Day turns				Night turns				Average hours per week	Eastern	Pittsburgh	Great Lakes and Middle West	Southern	Total
	Hours				Hours									
	Monday to Friday	Saturday	Sunday	Per week	Turns per week	Monday to Friday	Saturday	Sunday							Per week

EMPLOYEES WHO WORKED DAY TURNS ONLY

7	14	14	14	98						98	1			1
7	12	12	12	84						84	5	16	35	56
7	11	12	12	79						79	1			1
7	12	12	12	72						77	7			7
6	12	12	12	87						78				13
7	11	11	11	77						72	4	8	1	25
6	12	12	12	72						72		1		1
6	12	12	12	72						70	166	287	243	332
7	10	10	10	70						68				2
7	10	9	9	68						68		8		8
7	10	10	10	70						66 2/3		3		3
7	10	10	10	70						66			2	2
6	11	11		66						65				3
7	10	10	5	65						65	15			15
6	10	10	10	60						65	51	76	40	69
6	10	10		60						65 1/2		82		82
6	10	10	10	60						63	1			5
7	9	9	9	63						61	2			2
6	10	8		56						60				
7	10	8	10	66						60		76	53	271
6	10	10	10	60						60	66	187	554	563
6	10	10		60						59			5	5
6	10	10	10	60						59		6		6
6	10	9	10	59						58 1/2	25	91		119
6	9	9		54						58 1/2	2			2
7	9	9	9	63						58				1
7	10	8	2	58						57				1
6	9 1/2	9 1/2		57						57			1	1
6	10	6		56						56	1			1

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TABLE E (1).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—BLAST FURNACES—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Day turns					Night turns					Average hours per week	East-ern	Pitts-burgh	Great Lakes and Mid-dle West	South-ern	Total
Turns per week	Hours				Turns per week	Hours									
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week						
EMPLOYEES WHO WORKED DAY TURNS ONLY—Continued															
6	10	5		55						55	36				36
6	10	10	4	54						54				1	1
6	9	9		54						54	2				2
7	8	8	8	56						56	2	4	70		76
6	8	8	8	48						48		16		4	20
6	8	8	8	48						48		25	144	4	173
6	8	4		44						44			1		1
Total.											387	886	1, 113	1, 320	3, 706
EMPLOYEES WHO WORKED NIGHT TURNS ONLY															
					7	14	14	14	98	98	1				1
					7	13	13	13	91	91					1
					6	12	12	12	84	84	1	3		21	25
					6	13	13	13	78	78				1	1
					6	12	12	12	72	72	2				2
					6	12	12	12	84	84					7
					6	12	12	12	72	72					7
					6	10	10	10	70	70		1	22	18	41
					6	10	10	10	60	60		5	33	16	54
					6	10	10		60	60			47		47
					6	10		10	60	60			5		5
					7	8	8	8	56	56			13		13
					6	8	8	8	48	48		1			1
					6	8	8		48	48		2	1		3
Total.											4	12	121	71	208
EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER															
7	10	10		70	7	14	14	14	98	84	38				38
7	11	11	11	77	7	13	13	13	91	84	58			2	60
7	12	12	12	84	7	12	12	12	84	84	169	68		425	662
6	12	12	12	72	7	12	12	12	84	78					91
7	12	12	12	84	6	12	12	12	72	78	91				59
6	12	12	12	72	7	12	12	12	84	78			59		59
7	11	11	11	77	7	11	11	11	77	77		4			4
6	12	12	12	72	6	12	12	12	72	72		12		333	345
6	12	12		72	6	12		12	72	72	20				20
7	10	10	10	70	7	10	10	10	70	70	200	103	187	51	541
6	10	10		60	7	10	10	10	70	70					9
7	10	10	10	70	6	10	10	10	60	60	9				9
6	10	10	10	60	7	10	10	10	70	65		174	33		207
6	10	10		60	7	10	10	10	70	65					63
7	10	10	10	70	6	10	10		60	65		63			63
6	10	10		60	7	10	10	10	70	65		4		4	8
6	10	9	10	59	7	10	10	10	70	64½		12			12
7	9	9	9	63	7	9	9	9	63	63		14	2		16
6	10	10	10	60	6	10	10	10	60	60		95	126	218	439
6	10	10		60	6	10	10	10	60	60			14		14
6	10	10		60	6	10	10		60	60		2	18		20
7	8	8	8	56	7	8	8	8	56	56	526	1, 171	2, 561	97	4, 355
7	8	8	8	56	7	8	8	8	56	56		3	24	3	30
6	8	8	8	48	7	8	8	8	56	56	10	2, 275	1, 178	331	3, 794
7	8	8	8	56	6	8	8		56	53½					515
7	8	8	8	56	7	8	8	8	56	53½					515
7	8	8	8	56	6	8		8	56	53½			276		270
6	8	8		48	6	8	8		56	48					38
6	8	8		48	6	8	8		48	48					38
6	8	8		48	6	8			48	48			10		10
Total.											1, 121	4, 000	4, 526	1, 979	11, 626

Of the total number of blast-furnace employees reported, 6,982, or 45 per cent, worked 7 days per week all the time and 5,383, or 35 per cent, worked a week of seven turns at least once every three or four weeks. As to the hours of labor, 1,410, or 9 per cent of all employees, worked 12 or more hours per day, 4,778, or 31 per cent, worked 10 hours per day, and 9,305, or 60 per cent, worked a day of 8 hours.

Of the 1,410 12-hour workers, 844 worked 7 days per week all of the time and 159 worked a 7-day week part of the time. Of the 4,778 employees who worked a day of 10 hours, 1,624 worked 7 days per week all of the time and 637 worked 7 days per week part of the time. A large majority of the 9,305 8-hour workers worked 7 days per week—4,474 all the time and 4,585 a part of the time. The basic figures are set forth by districts in the following table. A few minor groupings do not appear in this summary.

In preparing the summary only the regular hours per turn an employee worked on Monday to Friday are considered, regardless of the length of his turn on Saturday and Sunday.

SUMMARY OF PRINCIPAL GROUPS IN TABLE E (1)

Item	Number of employees who worked specified days and hours—					Per cent of total
	East-ern district	Pitts-burgh district	G. L. & M. W. district	South-ern district	Total	
Total employees in blast furnaces	1,512	4,898	5,760	3,370	15,540	100
Employees who worked—						
7-day week all the time	1,173	1,690	3,122	997	6,982	45
7-day week part of the time	189	2,689	1,586	919	5,383	35
12 or more hours per day	393	100	59	858	1,410	9
7-day week and 12 or more hours per day all the time	273	87	-----	484	844	5
7-day week and 12 or more hours per day part of the time	100	-----	59	-----	159	1
10 hours per day	571	1,275	1,380	1,552	4,778	31
7-day week and 10 hours per day all the time	366	399	452	407	1,624	10
7-day week and 10 hours per day part of the time	77	414	73	73	637	4
8 hours per day	538	3,497	4,316	954	9,305	60
7-day week and 8 hours per day all the time	528	1,178	2,668	100	4,474	29
7-day week and 8 hours per day part of the time	10	2,275	1,454	846	4,585	30

BESSEMER CONVERTERS

Data for 1924 were collected from the pay rolls of 11 Bessemer converting plants and cover 3,457 employees in all occupations. Of these 3,457 employees, 1,606 are found in the principal productive occupations for which separate figures are given. Some duplexing (a combination of the Bessemer and basic open-hearth processes) was done by a few of the establishments from which data were obtained, although only one plant was engaged the majority of its time on this work. Data were first obtained for this department in 1907 and comparative figures are presented for the period 1907 to 1924.¹

The year 1924 marks the lowest point of full-time hours per week in the Bessemer converting department of the industry in the period 1907 to 1924. Up until the summer of 1923 this department, while showing a gradual decrease from former years in the hours of labor of employees as a whole, was still to a large extent on a 12-hour basis. A general reduction of the working time of the employees, however, took place in the latter part of 1923, and a large number of the plants adopted the 8-hour day for all employees. Considering the principal productive occupations as a whole, the average of full-time hours per week in 1924 was 23 per cent less than in 1922 and 25 per cent less than in 1913.

The study also shows there was a large increase in earnings per hour in 1924 as compared with any other year for which data are presented except 1920. Hourly earnings in that year were unusually high and were 6 per cent greater in the principal productive occupations combined than in 1924. The 1924 hourly earnings, however, were 33 per cent above those in 1922 and 127 per cent above those in 1913; in other words, more than $2\frac{1}{4}$ times the hourly earnings of 1913.

The increase in hourly earnings was more than enough to compensate for the reduction of hours, and weekly earnings in 1924 still show an increase as compared with all other years except 1919 and 1920.

The most significant facts concerning average earnings and average hours in each of the principal productive occupations of Bessemer converters are shown in Table A (2). While the customary working time of the 19 occupations combined was still 23 per cent less in 1924 than in 1922, when considered separately decreases in the average full-time hours per week ranged from 3.5 hours per week for stopper setters to 24.7 hours for cinder pitmen.

Cinder pitmen customarily worked 67.9 hours per week in 1907 and continued to do so with only slight variations until 1914, when the average was increased to 71.9 full-time hours. Working time remained at practically that level until 1919 when the average was again reduced to 69.7 hours. In 1920 and 1922 the average was increased to 72.8 and 74.1 hours, respectively, but in 1924 dropped to

¹ No data were collected for the years 1916, 1918, 1921, and 1923.

the new low average of 49.4 hours. Lesser but similar changes took place in the other occupations.

Average earnings per hour increased in each of the 19 principal productive occupations in 1924 as compared with 1922 and all other years except 1919 and 1920. The 1920 figures are higher in each occupation than those in 1924, and the averages in 1919 are higher in some occupations and lower in others. For example, the average of earnings for laborers, which occupation includes a large percentage of the employees in the principal productive occupations, was less than 20 cents per hour, 1907 to 1915, but in 1917 earnings were advanced to an average of 29.8 cents per hour. The increase was carried into 1919 and 1920, the averages for those years being 48.9 and 53.7 cents, respectively. In 1922 the average dropped back to 36.3 cents per hour but was increased in 1924 to 44.8 cents. Table A (2) shows like figures for the other occupations as well.

Average full-time earnings per week are below those for 1919 and 1920 for each occupation but show increases over those for all other years.

The distribution of employees according to their full-time hours per week contained in Table A (2) shows the extent to which full-time hours have been reduced in 1924, as compared with other years, in this department. In all previous years a considerable number of the employees had a week of more than 60 hours, while in 1924 only a small per cent of the employees in but four occupations worked over 60 hours per week. All employees in the remaining 15 occupations in 1924 had a week of 60 hours or less.

Index numbers for full-time hours per week, earnings per hour, and full-time weekly earnings are also contained in Table A (2). These are simply percentages computed from the averages presented in the table, using the average for 1913 as the base or 100 per cent. The index numbers for the department (all principal productive occupations combined) are presented on page 4.

TABLE A (2).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—BESSEMER CONVERTERS

[For explanation of this table see p. 13]

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—						
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84		
Stockers:															
1907.....	9	371	62.5	\$0.246	\$14.27	100	74	75	46	5	---	8	7	22	12
1908.....	9	260	58.3	.275	14.93	93	53	78	58	11	---	10	10	10	12
1909.....	9	266	63.6	.264	15.31	102	80	80	43	6	---	2	12	23	15
1910.....	10	352	64.9	.266	16.03	104	80	84	32	9	8	---	19	6	26
1911.....	10	241	61.7	.233	13.60	99	70	71	46	6	1	---	24	11	12
1912.....	10	280	62.1	.306	17.38	99	92	91	45	9	1	6	8	15	16
1913.....	10	337	62.5	.331	19.05	100	100	100	23	21	1	9	27	13	6
1914.....	6	167	55.5	.351	18.59	89	106	98	63	6	1	1	22	7	---
1915.....	6	187	55.6	.313	16.70	89	95	83	61	5	4	1	20	8	---
1917.....	3	144	55.3	.599	31.45	83	181	165	69	---	---	---	31	---	---
1919.....	6	196	64.6	.637	41.15	103	192	216	27	---	---	8	65	---	---
1920.....	10	351	68.0	.699	47.33	109	211	243	18	2	---	17	46	4	13
1922.....	10	230	70.2	.409	28.71	112	124	151	2	3	6	14	71	---	3
1924.....	10	437	48.3	.613	29.59	77	185	155	84	8	9	---	---	---	---

TABLE A (2).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—*BESSEMER CONVERTERS*—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were —					
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under 60	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84	
Cupola melters:														
1907	7	15	65.2	\$0.509	\$31.67	104	107	112	40	-----	13	20	13	13
1908	7	15	64.7	.350	22.20	104	73	79	40	-----	13	20	13	13
1909	7	15	64.7	.419	26.09	104	88	82	40	-----	13	20	13	13
1910	7	16	60.6	.447	25.85	97	94	82	38	19	-----	19	13	13
1911	8	17	65.2	.386	24.62	104	81	87	35	-----	12	29	12	12
1912	8	18	61.6	.409	23.82	99	86	84	50	-----	11	17	11	11
1913	8	19	62.4	.477	28.23	100	100	100	32	16	-----	11	21	11
1914	6	15	59.5	.390	23.00	95	82	81	20	40	-----	13	13	13
1915	6	15	59.3	.449	25.90	95	94	82	20	40	-----	27	13	-----
1917	3	7	61.7	.760	45.24	99	150	160	43	-----	-----	57	-----	-----
1919	4	9	62.2	.993	61.76	100	208	219	33	-----	-----	67	-----	-----
1920	6	22	61.7	1.063	65.85	99	223	233	-----	45	-----	32	23	-----
1922	4	15	65.3	.674	43.31	105	141	153	-----	40	-----	13	33	13
1924	5	19	49.3	.856	42.12	105	179	149	53	47	-----	-----	-----	-----
Cupola tappers:														
1907	8	50	60.5	.379	22.16	102	96	100	54	-----	8	18	12	8
1908	8	43	59.3	.335	19.67	100	85	88	56	-----	5	30	5	5
1909	8	43	61.5	.340	19.74	103	87	89	56	-----	-----	12	19	14
1910	8	56	58.9	.362	20.30	99	92	91	64	-----	-----	13	14	9
1911	9	45	60.4	.314	18.36	102	80	83	53	-----	-----	33	4	9
1912	9	48	60.6	.369	20.94	102	94	94	56	-----	4	10	21	8
1913	9	69	59.5	.393	22.25	100	100	100	30	-----	6	23	14	-----
1914	4	34	56.9	.286	16.47	96	73	74	26	71	-----	29	-----	-----
1915	4	24	55.8	.332	18.43	94	84	83	-----	75	-----	25	-----	-----
1917	2	16	54.0	.677	34.85	91	172	157	75	-----	-----	25	-----	-----
1919	5	29	60.2	.781	47.02	101	199	211	41	-----	-----	17	41	-----
1920	5	38	54.8	.979	53.76	92	249	242	-----	68	-----	18	13	-----
1922	3	11	60.3	.547	32.60	101	139	147	-----	55	-----	18	-----	-----
1924	4	30	49.7	.723	36.04	84	184	162	37	63	-----	27	18	-----
Blowers:														
1907	9	20	65.4	.619	39.55	103	104	106	30	-----	10	50	10	-----
1908	9	19	68.8	.466	32.41	109	78	87	16	-----	-----	11	63	11
1909	9	19	68.8	.486	33.29	109	81	89	16	-----	-----	11	63	11
1910	9	20	69.8	.536	37.00	110	90	99	15	-----	-----	60	15	10
1911	10	20	72.0	.493	35.48	114	82	95	-----	-----	10	90	-----	-----
1912	10	21	69.1	.529	36.36	109	88	97	14	-----	-----	10	67	10
1913	10	23	63.3	.598	37.33	100	100	100	26	13	-----	9	35	7
1914	12	27	64.1	.545	34.43	101	91	92	22	11	-----	7	52	7
1915	12	27	64.0	.561	35.61	101	94	95	22	11	-----	7	52	7
1917	8	18	64.0	.784	48.77	101	131	131	33	-----	-----	67	-----	-----
1919	8	18	63.4	1.226	77.73	100	205	208	33	-----	6	50	11	-----
1920	11	29	59.7	1.249	74.66	94	209	200	52	-----	-----	17	21	10
1922	11	33	60.7	.951	57.94	96	159	155	39	-----	-----	12	48	-----
1924	11	36	48.9	1.274	62.25	77	213	167	75	25	-----	-----	-----	-----
Regulators, first:														
1907	9	26	62.3	.437	27.28	92	97	90	46	-----	8	31	8	8
1908	9	25	64.7	.266	17.78	96	59	59	36	-----	-----	16	32	8
1909	9	25	64.8	.344	22.97	96	76	76	36	-----	-----	8	40	8
1910	10	31	62.1	.408	25.45	92	90	84	19	29	-----	8	39	-----
1911	10	24	66.8	.377	24.79	99	84	82	25	-----	-----	17	50	-----
1912	10	25	64.7	.411	26.24	96	91	87	36	-----	-----	16	32	-----
1913	10	24	67.6	.451	30.28	100	100	100	25	-----	-----	8	33	33
1914	11	24	63.8	.328	20.71	94	73	68	38	-----	-----	17	21	25
1915	11	26	64.7	.351	22.91	96	78	76	35	-----	-----	17	21	31
1917	8	17	66.8	.630	42.28	99	140	140	29	-----	-----	71	-----	-----
1919	10	25	69.2	.864	59.79	102	192	197	16	-----	-----	12	52	20
1920	11	36	61.5	1.002	61.63	91	222	204	22	19	-----	8	14	36
1922	11	32	64.3	.650	42.50	95	144	140	25	-----	-----	13	56	6
1924	11	41	50.1	.919	46.05	74	204	152	56	37	7	-----	-----	-----

¹ Including 7 per cent whose full-time hours per week were 91.

TABLE A (2).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—BESSEMER CONVERTERS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—					
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under 60	Over 48 and under 60	60 and under 72	Over 72 and under 84	84	
Regulators, second:														
1907	6	18	65.3	\$0.427	\$27.81	96	108	104	33		11	33	22	
1908	6	14	73.5	.269	19.64	108	68	73			29	43	29	
1909	6	14	73.8	.365	26.80	108	93	100			14	57	29	
1910	8	22	67.5	.378	25.52	99	96	95	27		9	45		18
1911	8	21	65.0	.333	21.41	95	85	80	29		19	52		
1912	9	24	67.0	.381	25.63	98	97	96	25		17	33	25	
1913	10	28	68.3	.394	26.81	100	100	100	21		14	29	36	
1914	11	25	66.5	.299	18.90	97	73	70	24		16	28	32	
1915	11	26	66.6	.324	21.64	98	82	81	23		8	46	23	
1917	8	19	67.4	.516	34.62	99	131	129	42			58		
1919	10	35	66.3	.754	49.99	97	191	186	14	9	11	66		
1920	9	31	61.1	.966	58.84	89	245	219	42	10	10	19	19	
1922	9	30	66.8	.639	43.07	98	162	161	20		17	63		
1924	9	43	48.7	.926	45.39	71	235	169	77	23				
Vessel men:														
1907	9	23	58.5	.793	44.58	101	107	107	52	13		9	17	9
1908	9	22	61.1	.528	31.27	106	71	75	41	14		18	18	9
1909	9	22	61.2	.630	37.19	106	85	90	41	14		18	18	9
1910	10	26	57.8	.685	38.18	100	92	92	46	23		15		15
1911	10	25	59.1	.580	32.45	102	78	78	48	12		24	8	8
1912	10	26	58.3	.688	38.60	101	92	93	35	35		8	15	8
1913	10	26	57.8	.744	41.52	100	100	100	23	46		15	15	
1914	12	31	55.6	.499	27.64	96	67	67	29	48		16	6	
1915	12	32	56.0	.554	30.87	97	74	74	28	47		19	6	
1917	8	30	61.9	.894	53.29	107	120	128	40			60		
1919	9	21	60.2	1.114	67.06	104	150	162	48		5	38	10	
1920	11	34	56.3	1.273	71.00	97	171	171	26	56	6	12		
1922	11	39	56.5	.897	50.59	98	121	122	33	38	5	23		
1924	11	45	51.4	1.166	59.93	89	157	144	7	93				
Vessel men's helpers:														
1907	9	47	57.0	.566	31.84	101	107	109	51	19		9	17	4
1908	9	45	59.5	.376	21.65	105	71	74	40	20		18	18	4
1909	9	45	59.6	.484	28.24	106	92	97	40	20		18	18	4
1910	10	53	56.5	.506	28.22	100	96	97	45	28		15		11
1911	10	51	57.6	.421	23.48	102	80	81	47	18		24	8	4
1912	10	53	56.5	.467	25.70	100	88	88	45	28		8	15	4
1913	10	53	56.4	.528	29.15	100	100	100	34	40		8	11	8
1914	12	57	54.3	.342	18.42	96	65	63	37	42		7	14	
1915	12	56	55.5	.383	21.18	98	73	73	32	43		25		
1917	8	45	56.5	.654	35.94	100	124	123	60			40		
1919	11	71	62.4	.875	54.60	111	166	187	35	6	11	38	10	
1920	11	75	58.7	.984	56.86	104	186	195	24	40	16	9	11	
1922	11	82	57.9	.646	37.51	103	122	129	35	32	10	23		
1924	11	86	50.6	.889	44.72	90	168	153	31	69				
Cinder pit men:														
1907	8	118	67.9	.206	13.32	101	87	86	20		37	32	3	7
1908	8	71	65.9	.173	11.27	98	73	72	30		17	39	14	
1909	8	92	68.4	.178	11.88	102	75	76	23		25	33	11	9
1910	9	85	67.6	.211	13.69	100	89	88	7	18		54	12	9
1911	9	62	69.8	.199	13.55	104	84	87	10		26	55	10	
1912	9	99	68.1	.200	13.23	101	84	85	21			46	30	2
1913	9	113	67.3	.238	15.56	100	100	100	24			42	32	2
1914	9	52	71.9	.213	15.30	107	89	98			35	58	8	
1915	9	48	72.0	.214	15.42	107	90	99			13	79	8	
1917	5	62	72.0	.325	23.40	107	137	150				100		
1919	10	100	69.7	.578	40.29	104	243	259	8	3	3	80	6	
1920	9	144	72.8	.592	43.11	108	249	277	9		2	5	28	29
1922	10	137	74.1	.388	28.73	110	163	185	2			69	9	20
1924	10	180	49.4	.556	27.46	73	234	176	74	18	8			

TABLE A (2).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—*BESSEMER CONVERTERS*—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—									
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84					
Bottom makers:																		
1907.....	9	17	73.4	\$0.386	\$28.10	99	101	100				12	65	24				
1908.....	9	17	72.4	.283	20.45	98	74	73				24	65	12				
1909.....	9	16	73.1	.351	25.57	99	91	91				13	69	19				
1910.....	10	19	73.4	.346	25.28	99	90	90					79	11	11			
1911.....	10	19	71.8	.337	24.18	97	88	86				21	79					
1912.....	10	20	72.5	.345	24.96	98	90	89				20	70	10				
1913.....	10	20	73.8	.384	28.05	100	100	100				20	50	20			10	
1914.....	12	22	73.0	.293	21.34	99	76	76				18	64	9			9	
1915.....	12	22	73.0	.332	24.02	99	86	86				18	64	9			9	
1917.....	8	16	72.0	.510	36.73	98	133	131				100						
1919.....	11	21	67.1	.731	52.41	91	203	187	14	10		10	62				5	
1920.....	11	25	64.8	.911	59.57	88	237	212	20	8		28	44					
1922.....	11	24	66.8	.583	38.79	91	152	138	17			29	54					
1924.....	11	38	62.3	.777	40.59	71	202	145	63		26	11						
Bottom makers' helpers:																		
1907.....	9	30	73.5	.257	18.82	101	101	101				27	47	27				
1908.....	9	27	72.2	.204	14.75	99	80	79				26	67	7				
1909.....	9	29	73.1	.234	17.08	100	92	92				28	52	21				
1910.....	10	34	72.8	.235	17.10	100	92	92					88	6	6			
1911.....	10	31	72.2	.234	16.88	99	92	91				32	65				3	
1912.....	10	39	72.4	.224	16.19	99	88	87				31	59	10				
1913.....	10	40	73.1	.255	18.59	100	100	100				30	45	20			5	
1914.....	12	39	72.4	.225	16.29	99	88	88				31	54	10			5	
1915.....	12	38	72.6	.239	17.30	99	94	94				16	63	11			5	
1917.....	8	30	72.0	.377	27.13	99	148	146				100						
1919.....	11	49	69.6	.602	41.90	95	236	225	10	4		12	65				5	
1920.....	11	60	66.2	.685	46.27	91	273	249	25			37	38					
1922.....	11	51	68.3	.455	31.26	93	178	169	16			27	57					
1924.....	11	71	63.4	.605	32.19	73	237	173	55		31	14						
Ladle liners:																		
1907.....	9	21	65.1	.454	28.95	95	110	103				5	10	48	10			
1908.....	9	21	65.6	.306	19.78	95	74	70				5	19	38			10	
1909.....	9	21	65.1	.392	25.22	95	95	89				5	10	45	10			
1910.....	10	25	66.8	.378	25.05	97	91	89					56				8	
1911.....	10	24	68.3	.342	22.85	99	83	81				4	17	67				
1912.....	10	24	68.9	.369	24.95	100	89	88				4	17	58			8	
1913.....	10	22	68.7	.418	28.22	100	100	100				4	18	45			18	
1914.....	12	25	68.6	.304	20.77	100	73	74				12	4	16	60		8	
1915.....	12	26	68.8	.344	23.47	100	83	83				12	4	15	62		8	
1917.....	8	15	71.2	.583	41.45	104	141	147				12	4	15	62		8	
1919.....	11	28	69.8	.779	54.37	102	188	193		7		7		85				
1920.....	11	31	65.0	.929	59.85	95	224	212		11		7	50	25				
1922.....	11	29	67.4	.617	42.49	98	148	151		17		16	39	16				
1924.....	11	44	49.7	.851	42.60	72	201	149	70	16	14	7	76					
Ladle liners' helpers:																		
1907.....	9	39	68.2	.255	16.65	96	103	97	15		3	26	51	5				
1908.....	9	31	67.5	.209	13.79	95	85	81			3	32	39				6	
1909.....	9	39	68.5	.230	15.26	97	93	89			3	26	46				10	
1910.....	10	39	68.7	.236	15.73	97	96	92			3		67				10	
1911.....	10	34	69.1	.233	15.75	97	94	92			3		67				10	
1912.....	10	34	69.6	.228	15.43	98	92	90			3		41	47				
1913.....	9	38	70.9	.247	17.09	100	100	100			3		41	41			6	
1914.....	11	34	69.1	.222	15.24	97	90	89			3		37	21			32	
1915.....	11	34	69.5	.233	15.91	98	94	93			3		41	6			6	
1917.....	8	34	71.3	.365	26.03	101	148	152			9	3	24	59			6	
1919.....	11	76	71.7	.551	39.51	101	223	231		3	6		8	64			94	
1920.....	10	43	69.9	.680	47.68	99	275	279		5	5	7	8	66			18	
1922.....	10	62	71.8	.442	31.05	101	179	182				7	26	49			14	
1924.....	11	86	62.0	.604	31.38	73	245	170	70	6	7	17	15	85				

TABLE A (2).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—BESSEMER CONVERTERS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—					
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84	
Stopper makers:														
1907	9	10	72.8	\$0.316	\$23.01	103	105	108	---	---	---	40	30	10
1908	9	9	72.9	.223	16.10	103	74	76	---	22	---	44	11	22
1909	9	9	71.6	.270	19.22	101	89	90	---	22	22	22	11	22
1910	10	12	73.0	.260	19.14	103	86	90	---	8	---	75	---	17
1911	10	10	72.0	.273	19.53	102	90	92	---	20	---	60	---	20
1912	10	10	70.8	.272	18.91	100	90	89	---	20	---	50	---	20
1913	10	10	70.6	.302	21.25	100	100	100	---	10	10	80	---	---
1914	12	12	70.2	.251	17.60	99	83	83	---	8	33	58	---	---
1915	12	12	69.7	.263	18.13	99	87	85	---	17	8	75	---	---
1917	8	10	67.8	.433	29.15	96	143	137	---	20	30	50	---	---
1919	11	15	69.6	.660	45.94	99	219	216	13	7	7	53	7	13
1920	11	12	65.0	.718	46.73	92	238	220	25	8	8	50	8	---
1922	10	12	66.4	.459	30.52	94	152	144	17	25	8	42	8	---
1924	11	19	56.6	.573	32.26	80	190	152	32	68	---	---	---	---
Stopper setters:														
1907	9	45	51.5	.630	31.79	100	114	113	87	---	---	9	4	---
1908	9	40	54.3	.343	18.50	105	62	66	75	---	---	20	5	---
1909	9	34	55.4	.552	29.36	107	100	105	71	---	---	24	6	---
1910	10	39	52.6	.577	29.81	102	104	106	69	15	---	10	---	5
1911	10	39	55.3	.498	26.08	107	90	93	69	---	---	31	---	---
1912	10	42	51.7	.496	25.36	100	90	91	86	---	---	10	5	---
1913	10	43	51.6	.553	28.01	100	100	100	86	---	---	9	5	---
1914	12	44	50.7	.376	19.03	98	68	68	68	20	---	11	5	---
1915	12	42	51.5	.423	21.76	100	76	78	71	14	---	14	---	---
1917	8	40	49.6	.815	40.03	96	147	143	90	---	---	10	---	---
1919	11	46	53.7	1.092	58.64	104	197	209	67	9	---	2	15	7
1920	11	50	51.0	1.225	61.45	99	222	219	88	---	---	8	4	---
1922	11	43	52.3	.786	40.98	101	142	146	84	---	---	16	---	---
1924	11	53	48.8	.977	47.65	95	177	170	72	28	---	---	---	---
Steel pourers:														
1907	9	29	55.4	.693	36.39	99	108	106	72	---	---	14	14	---
1908	9	28	57.4	.439	24.25	103	69	71	64	---	---	21	14	---
1909	9	28	57.5	.576	31.61	103	90	92	64	---	---	21	14	---
1910	10	32	55.6	.617	32.74	100	96	95	66	9	---	13	---	13
1911	10	30	55.1	.535	27.91	99	84	81	70	---	---	30	---	---
1912	10	34	55.7	.570	30.65	100	89	89	71	---	---	18	12	---
1913	10	34	55.7	.640	34.39	100	100	100	71	---	---	18	12	---
1914	12	37	52.5	.444	23.42	94	69	68	67	24	---	19	---	---
1915	12	35	53.5	.525	27.96	96	82	81	60	17	---	23	---	---
1917	8	27	52.7	.849	43.62	95	133	127	78	---	---	22	---	---
1919	10	30	56.5	1.110	62.72	101	173	182	63	---	3	27	7	---
1920	11	38	52.9	1.326	69.30	95	207	202	79	---	---	16	5	---
1922	10	35	52.9	.905	47.31	95	141	138	80	---	---	20	---	---
1924	11	46	48.8	1.073	52.16	88	168	152	70	30	---	---	---	---
Mold cappers:														
1907	8	48	54.5	.347	18.02	92	96	89	75	---	---	17	8	---
1908	8	39	53.7	.196	10.57	90	54	52	77	---	---	18	5	---
1909	8	43	54.0	.271	14.26	91	75	70	77	---	---	14	9	---
1910	9	52	57.0	.314	16.96	96	87	84	23	46	---	19	4	8
1911	9	37	64.2	.282	17.36	108	78	86	32	---	---	62	5	---
1912	10	52	61.5	.301	17.23	103	84	85	46	---	12	27	15	---
1913	10	61	59.5	.360	20.28	100	100	100	54	---	---	10	23	13
1914	10	39	60.8	.260	15.67	102	72	77	38	8	---	54	---	---
1915	10	40	60.9	.294	17.53	102	82	86	38	8	---	10	45	---
1917	5	29	54.6	.631	33.01	92	175	163	72	---	---	28	---	---
1919	9	55	61.5	.688	42.31	103	191	209	29	20	---	36	15	7
1920	9	70	58.0	.755	43.56	97	210	215	64	---	---	29	7	---
1922	10	49	58.1	.572	33.16	98	159	164	61	---	---	8	24	6
1924	9	66	48.4	.728	35.19	81	202	174	89	11	---	---	---	---

TABLE A (2).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—*BESSEMER CONVERTERS*—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—						
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84		
Ingot strip-pers:															
1907.....	9	29	67.4	\$0.310	\$19.60	96	93	86	31			14	21	21	14
1908.....	9	28	68.4	.238	16.34	98	71	72	21			21	21	36	21
1909.....	9	28	70.2	.264	18.17	100	79	80	21			14	21	21	21
1910.....	10	31	68.1	.303	19.69	97	91	86	10	19			32	19	19
1911.....	10	27	70.4	.282	19.26	101	84	84		11		22	44	22	
1912.....	10	28	68.8	.320	20.90	98	96	92	11	11		14	29	36	
1913.....	10	28	69.9	.334	22.81	100	100	100		21		7	21	50	
1914.....	12	29	66.0	.313	20.11	94	94	88	21	10		7	28	28	7
1915.....	12	31	66.2	.332	21.39	95	99	94	19	10			39	32	
1917.....	8	33	68.7	.479	31.71	98	143	139		18			64	7	12
1919.....	10	36	65.3	.726	47.41	93	217	208		8	25	14	47	6	
1920.....	11	34	59.1	.892	52.56	85	267	230		41	24		6	29	
1922.....	11	39	65.5	.613	39.90	94	184	175		15	18	10	38	5	13
1924.....	11	47	51.0	.804	40.88	73	241	179		57	43				
Laborers:															
1907.....	9	801	78.0	.155	12.12	104	81	84		(¹)	3	21	33	42	
1908.....	9	425	76.2	.155	11.80	101	81	82			6	8	31	22	34
1909.....	9	564	76.9	.151	11.62	102	79	81		2	1	4	25	39	30
1910.....	10	786	77.8	.163	12.69	104	85	88			3	2	35	20	141
1911.....	10	593	74.6	.166	12.39	99	86	86			5	4	43	36	12
1912.....	10	626	75.7	.167	12.64	101	87	88		(²)	3	5	39	28	26
1913.....	10	681	75.1	.192	14.38	100	100	100			1	6	40	33	20
1914.....	12	546	74.0	.193	14.27	99	101	99		(²)	7	8	47	13	24
1915.....	12	496	74.3	.193	14.31	99	101	109			8	9	45	10	28
1917.....	8	493	73.4	.298	21.92	96	155	152			2	2	67	29	
1919.....	11	691	70.8	.489	34.62	94	255	241			5	5	24	34	1
1920.....	10	726	74.9	.537	40.17	100	280	279			4	2	25	19	24
1922.....	11	454	70.7	.363	25.64	94	189	178			10	1	15	67	2
1924.....	11	593	58.0	.448	25.87	77	233	180			26	4	53	17	

¹ Including 7 per cent whose full time hours per week were 91.

² Less than 1 per cent.

The customary working time per week of all employees covered in the Bessemer converting department in each of the 5 years, 1914, 1915, 1920, 1922, and 1924,² has been classified, and the number and per cent of the employees coming under each classification are shown in Table B (2).

Bessemer converters are almost universally operated 6 days per week, and a very large percentage of the employees covered in each year have worked on that basis. The customary practice of repairing the equipment on Saturday night or Sunday, however, has resulted in some 7-day work, although employment in most instances is not continuous.

In 1924, 71 per cent of all employees reported had a working week of 6 days, 8 per cent were on a 7-day-per-week basis, and 21 per cent alternated or rotated weekly from 6 to 7 days. When the districts are considered separately, 6-day work increased slightly in the Pittsburgh district in 1924 as compared with 1922, but suffered a considerable reduction in the Great Lakes and Middle West district.

³ These 5 years are the only ones in which data were collected covering all principal productive and other occupations.

This reduction is almost entirely absorbed by the increase in number of employees who worked 6 days, 6 days, and 7 days¹; or 6 days, 7 days, and 7 days, in rotation.

TABLE B (2).—NUMBER AND PER CENT OF EMPLOYEES WHO CUSTOMARILY WORKED EACH SPECIFIED NUMBER OF DAYS PER WEEK, 1914 TO 1924, BY DISTRICT AND YEAR.—BESSEMER CONVERTERS

[For explanation of this table see p. 13]

District and year	Number of plants	Number of employees	Number of employees whose customary working days per week were—					Per cent of employees whose customary working days per week were—				
			6	6 and 7 alternately	6, 6, and 7, in rotation	6, 7, and 7, in rotation	7	6	6 and 7 alternately	6, 6, and 7, in rotation	6, 7, and 7, in rotation	7
Pittsburgh:												
1914.....	7	1,500	1,061	75	67	6	291	71	5	4	(1)	19
1915.....	7	1,463	1,044	65	61	6	287	71	4	4	(1)	19
1920.....	6	1,900	1,136	138	42	-----	584	60	7	2	-----	31
1922.....	6	1,394	1,078	61	23	5	227	77	4	2	(1)	16
1924.....	6	1,894	1,515	39	140	24	176	80	2	7	1	9
Great Lakes and Middle West:												
1914.....	5	767	757	4	-----	-----	6	99	1	-----	-----	1
1915.....	5	755	740	2	-----	-----	13	98	(1)	-----	-----	2
1920.....	5	1,259	714	192	60	52	241	57	15	5	4	19
1922.....	5	1,057	899	-----	69	70	19	85	-----	7	7	2
1924.....	5	1,563	943	91	104	336	89	60	6	7	21	6
Total:												
1914.....	12	2,267	1,818	79	67	6	297	80	3	3	(1)	13
1915.....	12	2,218	1,784	67	61	6	300	80	3	3	(1)	14
1920.....	11	3,159	1,850	330	102	52	825	59	10	3	2	26
1922.....	11	2,451	1,977	61	92	75	246	81	2	4	3	10
1924.....	11	3,457	2,458	130	244	360	265	71	4	7	10	8

¹ Less than 1 per cent.

Table C (2) presents the most significant facts relative to earnings and hours of labor of employees in the principal productive occupations in the 11 Bessemer converting plants covered in 1924. The occupations have been arranged as nearly as possible in the order of production, and figures are shown by districts and both districts combined for each occupation.

Referring to the first occupation presented, stockers, the 296 positions were kept filled by a total of 437 men during the pay period scheduled. As stated in the explanation of this table, on page 14, many of the employees worked only part time in this occupation, and 437 men were necessary to keep the 296 positions filled. However, it must not be assumed that these employees worked only as stockers during the period. A large percentage of them worked in other occupations, and the number of employees shown in the separate occupations in the following table can not be combined as the number of employees who worked in the principal productive occupations in this department.

The average customary full time of the 437 men working in the 296 positions was 5.9 turns per week, 8.1 hours per turn, and 48.3 hours per week. These averages are for both districts combined and do not show the range of the figures for the two districts. Working conditions, however, are very similar, and the average full-time

hours per week in the Pittsburgh district was 47.5 as compared with 49.6 in the Great Lakes and Middle West district.

In the distribution of the customary working time of the 437 employees, 366, or 84 per cent, worked 48 hours per week or less. No employees in this occupation had a working week of more than 60 hours.

The average of hourly earnings of stockers was 62.5 cents in the Pittsburgh district and 59.3 cents in the Great Lakes and Middle West district. Average earnings for the half month period were also slightly higher in the Pittsburgh district, although employees in the Great Lakes and Middle West district worked more hours on the average at this occupation. The average of hours worked during the 16-day period in both districts combined was 78.4 and the average of earnings received was \$48.08. These averages are only for the occupations under consideration and do not include earnings that employees may have made in other occupations during the same period.

The average of full-time earnings per week of stockers in the Great Lakes and Middle West district was \$29.69 as compared with \$29.41 in the Pittsburgh district.

TABLE C (2).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND DISTRICT—BESSEMER CONVERTERS

[See explanation on p. 3 of adjustment of time worked and earnings received]

Occupation and district	Number of plants	Positions				Employees working in scheduled pay period (16 days) at specified occupation											Average full-time earnings per week	
		Number	Average customary full-time of employees in positions			Number	Number whose customary full-time hours per week were—						Average hours worked	Average earnings in pay period	Average earnings per hour			
			Turns per week	Hours per turn	Hours per week		44 and under	48	Over 48 and under 56	56	Over 56 and under 60	60				Over 60 and under 72		
Stockers:																		
Pittsburgh	5	185	5.9	8.1	47.5	277	34	230					13		77.5	\$48.47	\$0.625	\$29.69
Great Lakes and Middle West	5	111	6.1	8.2	49.6	160		102	33				25		79.9	47.40	.593	29.41
Total	10	296	5.9	8.1	48.3	437	34	332	33				38		78.4	48.08	.613	29.69
Cupola melters:																		
Pittsburgh	3	12	5.8	8.3	48.3	12	3	3	6					108.7	97.81	.900	43.46	
Great Lakes and Middle West	2	6	6.3	8.1	51.3	7		4	3					102.9	79.87	.777	39.83	
Total	5	18	6.0	8.2	49.3	19	3	7	9					106.6	91.20	.856	42.12	
Cupola tappers:																		
Pittsburgh	2	15	5.9	8.1	48.1	17	7		10					81.2	62.67	.772	37.14	
Great Lakes and Middle West	2	9	6.4	8.1	52.4	13		4	9					82.8	54.65	.660	34.60	
Total	4	24	6.1	8.1	49.7	30	7	4	19					81.9	59.20	.723	36.04	
Blowers:																		
Pittsburgh	6	17	6.1	8.0	48.5	21		18	3					92.2	118.28	1.282	62.19	
Great Lakes and Middle West	5	15	6.1	8.0	49.3	15		9	6					112.6	142.39	1.265	62.34	
Total	11	32	6.1	8.0	48.9	36		27	9					100.7	128.33	1.274	62.25	
Regulators, first:																		
Pittsburgh	6	16	6.1	8.4	50.8	22		12	7			3		86.3	80.36	.931	47.28	
Great Lakes and Middle West	5	15	6.1	8.0	49.3	19		11	8					91.1	82.50	.905	44.63	
Total	11	31	6.1	8.2	50.1	41		23	15			3		88.6	81.35	.919	46.05	

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TABLE C (2).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND DISTRICT—BESSEMER CONVERTERS—Continued

Occupation and district	Number of plants	Positions			Employees working in scheduled pay period (16 days) at specified occupation										Average full-time earnings per week			
		Number	Average customary full-time of employees in the positions			Number	Number whose customary full-time hours per week were—						Average hours worked	Average earnings in pay period		Average earnings per hour		
			Turns per week	Hours per turn	Hours per week		44 and under	48	Over 48 and under 56	56	Over 56 and under 60	60					Over 60 and under 72	
Regulators, second:																		
Pittsburgh	5	17	6.0	8.0	48.0	26		26						74.8	\$73.29	\$0.980	\$47.05	
Great Lakes and Middle West	4	16	6.1	8.1	49.4	17		7	10					105.2	91.25	.867	42.84	
Total	9	33	6.1	8.0	48.7	43		33	10					86.8	80.39	.926	45.39	
Vessel men:																		
Pittsburgh	6	17	6.3	8.1	50.9	24		3	21					82.7	102.55	1.240	63.12	
Great Lakes and Middle West	5	15	6.4	8.0	51.9	21			21					85.3	92.50	1.084	56.28	
Total	11	32	6.3	8.1	51.4	45		3	42					83.9	97.86	1.166	59.93	
Vessel men's helpers:																		
Pittsburgh	6	34	6.2	8.0	49.9	45		20	25					85.7	79.71	.980	46.41	
Great Lakes and Middle West	5	26	6.4	8.0	51.3	41		7	34					74.1	61.92	.836	42.83	
Total	11	60	6.3	8.0	50.6	86		27	59					80.2	71.23	.889	44.72	
Cinder pitmen:																		
Pittsburgh	5	74	6.0	8.2	49.3	116		102				14		65.6	35.98	.549	27.05	
Great Lakes and Middle West	5	39	6.2	8.1	49.6	64		31	33					66.8	37.98	.569	28.21	
Total	10	113	6.1	8.2	49.4	180		133	33			14		66.0	36.69	.556	27.46	
Bottom makers:																		
Pittsburgh	6	18	6.0	8.7	52.0	21		14				7		100.1	79.83	.798	41.48	
Great Lakes and Middle West	5	12	6.1	8.7	52.3	17		10				3	4	85.9	64.27	.748	39.50	
Total	11	30	6.0	8.7	52.3	38		24				10	4	93.7	72.87	.777	40.59	
Bottom maker's helpers:																		
Pittsburgh	6	23	6.0	8.4	50.6	32		24				8		82.2	55.37	.673	34.07	
Great Lakes and Middle West	5	25	6.1	9.1	55.9	39		15				14	10	80.7	44.22	.548	30.64	
Total	11	48	6.1	8.8	53.4	71		39				22	10	81.4	49.24	.605	32.19	

Table D (2) shows the number of employees and the average and classified earnings per hour of blowers and vessel men in 1924 for each of the two districts separately and both districts combined. These two occupations are selected as representative of the spread or variation in hourly earnings within the occupations in this department.

The average hourly earnings for blowers in both districts combined was \$1.274 and for vesselmen, \$1.166. The range of earnings in the Pittsburgh district was greater than that in the Great Lakes and Middle West district in both occupations.

TABLE D (2).—AVERAGE AND CLASSIFIED EARNINGS PER HOUR IN TWO SELECTED OCCUPATIONS, 1924, BY DISTRICT—*BESSEMER CONVERTERS*

[For explanation of this table see p. 15]

Occupation and district	Number of employees	Average earnings per hour	Number of employees whose earnings per hour were—									
			Under 60 cts.	60 and under 70 cts.	70 and under 80 cts.	80 and under 90 cts.	90 cts. and under \$1	\$1 and under \$1.15	\$1.15 and under \$1.30	\$1.30 and under \$1.45	\$1.45 and under \$1.60	\$1.60 and under \$1.75
BLOWERS												
Pittsburgh.....	18	\$1.282			1	2	1	2	9			3
Great Lakes and Middle West.....	15	1.265					1	9			2	3
Total.....	33	1.274			1	2	2	11	9		2	6
VESSEL MEN												
Pittsburgh.....	20	1.240	1	4	1		2	3		3	6	
Great Lakes and Middle West.....	21	1.084		1	1	4	2	8	5			
Total.....	41	1.166	1	5	2	4	4	11	5	3	6	

The customary turns per week and hours per turn and per week, together with the average full-time hours per week, of employees in the Bessemer converting department are shown in detail, by districts and both districts combined, for the year 1924 in Table E (2). The information was obtained from 11 plants and covers 3,457 employees in all occupations.

The table shows the customary number of day turns and night turns per week and the corresponding hours for each turn for each day of the week as well as the full-time hours per week. Employees are divided into three groups as follows: (a) Those who work days only, (b) those who work nights only, and (c) those who alternate or rotate weekly from one shift to another. The order of arrangement begins with the highest average full-time hours per week.

Gas or repair turns have been disregarded when employees customarily work such turns at less frequent intervals than once every three weeks on a 3-turn basis or once every four weeks on a 2-turn basis. In a few instances relief systems also have been omitted where the periods elapsing between reliefs were longer than three or four weeks.

In some instances in the table, hours are reported for 7 days, yet the number of days worked is given as 6. This is owing to the fact

that it is a 7-day occupation wherein each employee was relieved 1 day in 7, with no information available, however, as to which day; therefore, the hours for all days have been shown and the relief indicated in the full-time hours per week.

In the main the table is believed to be clear, but some points may need explanation. The first line of the table shows that in the plants canvassed, two men in the Great Lakes and Middle West district were found on a job requiring them to work 7 days per week and 10 hours per day, Monday to Saturday, inclusive, and 12 hours on Sunday, a total of 72 hours per week.

In the third section of the table the first line shows that one man in the Great Lakes and Middle West district alternated from 7 turns of 12 hours, Monday to Friday, inclusive, with 10 hours on Saturday and 12 hours on Sunday on day work, to 6 turns of 10 hours on night work, an average of 71 hours per week. The bracketed sixth and seventh lines of this section show 11 men in the Pittsburgh district going from 7 day turns of 10 hours to 6 night turns of 10 hours, followed by 6 day turns of 10 hours, making an average of 63½ hours of labor per week.

When there are three 8-hour turns, the second and third are tabulated as night turns.

TABLE E (2).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICTS—BESSEMER CONVERTERS

[For explanation of this table see p. 15]

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district			
Day turns					Night turns					Average hours per week	Pittsburgh	Great Lakes and Middle West	Total
Turns per week	Hours				Turns per week	Hours							
	Monday to Friday	Saturday	Sunday	Per week		Monday to Friday	Saturday	Sunday	Per week				
EMPLOYEES WHO WORKED DAY TURNS ONLY													
7	10	10	12	72	-----	-----	-----	-----	72	-----	2	2	
7	10	10	10	70	-----	-----	-----	-----	70	5	-----	5	
6	10½	8¾	-----	60	-----	-----	-----	-----	60	29	-----	29	
6	10	10	10	60	-----	-----	-----	-----	60	-----	37	37	
6	10	10	-----	60	-----	-----	-----	-----	60	106	141	247	
6	10	9	-----	59	-----	-----	-----	-----	59	1	-----	1	
6	9	9	-----	54	-----	-----	-----	-----	54	-----	1	1	
6	8½	5	-----	47½	-----	-----	-----	-----	47½	-----	1	1	
6	8	8	-----	48	-----	-----	-----	-----	48	21	11	32	
Total	-----	-----	-----	-----	-----	-----	-----	-----	-----	162	193	355	
EMPLOYEES WHO WORKED NIGHT TURNS ONLY													
-----	-----	-----	-----	7	10	10	10	70	70	2	2	4	
-----	-----	-----	-----	6	11	11	11	66	66	7	-----	7	
-----	-----	-----	-----	6	10	10	10	60	60	-----	1	1	
-----	-----	-----	-----	6	10	10	10	60	60	15	2	17	
-----	-----	-----	-----	6	8	-----	8	48	48	2	-----	2	
Total	-----	-----	-----	-----	-----	-----	-----	-----	-----	26	5	31	

TABLE E (2).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICTS—*BESSEMER CONVERTERS*—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district			
Day turns					Night turns					Average hours per week	Pittsburgh	Great Lakes and Middle West	Total
Turns per week	Hours				Turns per week	Hours							
	Monday to Friday	Saturday	Sunday	Per week		Monday to Friday	Saturday	Sunday	Per week				
EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER													
7	12	10	12	82	6	10	10	10	60	71		1	1
7	10	10	10	70	7	10	10	10	70	70	8	2	10
7	10	10	12	72	6	10	10	10	60	66		1	1
7	10 $\frac{1}{4}$	8 $\frac{3}{4}$	10	70	6	10 $\frac{1}{4}$		8 $\frac{3}{4}$	60	65	12		12
7	10	10	10	70	6	10		10	60	65	27	89	116
7	10	10	10	70	6	10		10	60	63 $\frac{1}{2}$	11		11
6	10	10		60	6	10		10	60	62 $\frac{1}{2}$	7		7
6	10 $\frac{1}{4}$	8 $\frac{3}{4}$		60	7	10 $\frac{1}{4}$		8 $\frac{3}{4}$	60	60	7		7
6	10	10	10	60	6	10	10	10	60	60		5	5
6	10	10		60	6	10	10	10	60	60	2	87	89
6	10	10		60	6	10	10	10	60	60		34	34
6	10	10		60	6	10	10	10	60	60	102	13	115
6	10	9	10	59	6	10	10	10	60	59 $\frac{1}{2}$		17	17
7	8	8	12	60	6	8	8	12	48	56		48	48
7	8	8	8	56	7	8	8	8	56	56	161	83	244
7	8	8	10	58	6	8	8	10	48	54 $\frac{1}{2}$		9	9
6	8	8		48	7	8	8	11	59	54 $\frac{1}{2}$	3		3
7	8	8	12	60	6	8	8	12	52	53 $\frac{1}{2}$		5	5
7	8	8	8	56	7	8	8	8	48	53 $\frac{1}{2}$	13		13
7	8	8	8	56	6	8	8	8	48	53 $\frac{1}{2}$		71	71
6	8	8		48	7	8	8	8	56	53 $\frac{1}{2}$	8	128	136
6	8	8	8	48	7	8	8	8	56	53 $\frac{1}{2}$		80	80
6	8	8		48	7	8	8	11	59	51 $\frac{1}{2}$	21		21
6	8	8		48	6	8	8	8	48	51 $\frac{1}{2}$		22	22
6	8	8		48	7	8	10	8	58	51 $\frac{1}{2}$	12		12
6	8	8		48	6	8	12	8	48	60		4	4
7	8	8		48	6	8	8	8	48	48		53	53
6	8	8	8	56	6	8	8	8	48	50 $\frac{1}{2}$		53	53
6	8	8		48	6	8	8	8	48	50 $\frac{1}{2}$	37		37
7	8	8	8	56	6	8	8	8	48	50 $\frac{1}{2}$	46	15	61
6	8	8		48	6	8	8	8	48	50 $\frac{1}{2}$		9	9
6	8	8		48	7	8	8	8	56	54		6	6
6	8	8		48	6	8	11 $\frac{1}{2}$	8	48	49 $\frac{1}{2}$		106	106
6	8	8		48	6	8	8	8	48	48	1,153	266	1,419
6	8	8		48	6	8	8	8	48	48		205	205
6	8	8	8	48	6	8	8	8	48	48	17		17
6	8	8		48	6	8	8	8	48	48		12	12
5	8			40	6	8	8	8	48	45 $\frac{1}{2}$	6		6
6	8	8		48	5	8	8	8	40	42 $\frac{1}{2}$	15		15
5	8			40	5	8	8	8	40	40	32		32
Total											1,706	1,365	3,071

Of the total number of Bessemer-converting employees reported, 2,680, or 78 per cent, worked 8 hours per day and 720, or 21 per cent, worked 10 hours. No employees were found in the plants canvassed who worked on a 12-hour basis all of the time. Very little 7-day work was reported in this department, only 265, or 8 per cent of all employees, working 7 days a week all the time and 738, or 21 per cent, a part of the time. Practically all of the 7-day workers worked 8 hours per day. The basic figures are set forth by districts in the following table. A few minor groupings do not appear in this summary.

In preparing the summary only the regular hours per turn an employee worked on Monday to Friday are considered, regardless of the length of his turn on Saturday and Sunday.

SUMMARY OF PRINCIPAL GROUPS IN TABLE E (2)

Item	Number of employees who worked specified days and hours			Per cent of total
	Pittsburgh district	Great Lakes and Middle West district	Total	
Total employees in Bessemer converting department.....	1,894	1,563	3,457	100
Employees who worked—				
7-day week all the time.....	176	89	265	8
7-day week part of the time.....	203	535	738	21
10 hours per day.....	286	434	720	21
7-day week and 10 hours per day all the time.....	15	6	21	1
7-day week and 10 hours per day part of the time.....	45	90	135	4
8 hours per day.....	1,553	1,127	2,680	78
7-day week and 8 hours per day all the time.....	161	83	244	7
7-day week and 8 hours per day part of the time.....	146	444	590	17

OPEN-HEARTH FURNACES

The basic open-hearth process alone is treated in this report and only furnaces of the fixed or stationary type have been included. While tilting or rolling furnaces are used to some extent by a few companies in different localities, this type of furnace is chiefly of local significance and is not general to the industry. Consequently the material used has been limited to stationary furnaces in which the basic process is employed and all figures presented are strictly comparable.

Data for 1924 were collected from the pay rolls of 26 open-hearth furnace plants and cover 11,611 employees in all occupations. Of the total number of employees reported, 6,890 are included in the principal productive occupations for which separate figures are given. Data were first obtained for this department in 1910, and comparative figures are presented for the years 1910 to 1924.¹

The year 1924 marks the lowest point of full-time hours per week in open-hearth furnaces in the period 1910 to 1924. Up until the summer of 1923 this department, while showing a gradual decrease from former years in the hours of labor of employees as a whole, was largely on a 12-hour basis and some employees also worked 7 days per week. A general reduction in the working time of the employees, however, took place in the latter part of 1923 and a large number of the plants adopted the 8-hour day for all employees. Considering the principal productive occupations as a whole, average full-time hours per week in 1924 were 21 per cent less than in 1922 and 26 per cent less than in 1923.

The study also shows there was a large increase in earnings per hour in 1924 as compared with any other year for which data are presented, except 1920. Hourly earnings in that year were unusually high and were 5 per cent greater in the principal productive occupations combined than in 1924. The 1924 hourly earnings, however, were 33 per cent above those in 1922 and 169 per cent above those in 1913—in other words, slightly more than 2½ times the hourly earnings of 1913.

The increase in hourly earnings was more than enough to compensate for the reduction of hours, and weekly earnings in 1924 still show an increase as compared with all other years except 1919 and 1920.

The most significant facts concerning average earnings and average hours in each of the principal productive occupations of open-hearth furnaces are shown in Table A (3). While the customary working time of the 15 occupations combined was 21 per cent less in 1924 than in 1922, when considered separately decreases in the average full-time hours per week range from 8.9 hours per week for laborers to 17.7 hours for ladle cranemen. Ladle cranemen customarily worked 77.2 hours per week in 1910 and again in 1913. During the period 1913 to 1919 changes in the working time were very slight, the first real break occurring in 1920, when the average full-time hours per week were reduced to 68.3. In 1922 the average was increased to 72.9, but in 1924 dropped to the new low average of

¹ No data were collected for 1916, 1918, 1921, and 1923.

55.2 hours. Lesser but similar changes took place in the other occupations.

Average earnings per hour increased in each of the 15 principal productive occupations in 1924 as compared with 1922 and all other years except 1919 and 1920. The 1920 figures are higher in each occupation than those in 1924, and the averages in 1919 are higher in 3 occupations but lower in the remaining 12. For example, the average earnings per hour of laborers, which occupation comprises a large number of the employees in the principal productive occupations, was less than 20 cents per hour, 1910 to 1915, but in 1917 earnings were advanced to an average of 29.2 cents per hour. The increase was carried into 1919 and 1920, the averages for those years being 46.8 and 52.5 cents, respectively. In 1922 the average dropped back to 35.4 cents per hour but was increased in 1924 to 43.4 cents. Table A (3) shows like figures for the other occupations as well.

Average full-time earnings per week are below those of 1919 and 1920 for each occupation but show increases over those for all other years.

The distribution of employees according to their full-time hours per week contained in Table A (3) shows the extent to which full-time hours have been reduced in 1924 as compared with other years in this department. In all previous years only a very small per cent of the employees had a week of less than 60 hours, while in 1924 only a small number of employees in any occupation except laborers had a working week of as many as 60 hours. In the occupation of laborers 44 per cent worked less than 60 hours per week customarily 51 per cent worked 60 and under 72 hours, and 4 per cent worked over 72 hours.

Index numbers for full-time hours per week, earnings per hour, and full-time earnings per week are also contained in Table A (3). These are simply percentages computed from the averages presented in the table, using the average for 1913 as the base or 100 per cent. The index numbers for the department as a whole (all principal productive occupations combined) are shown on page 4.

TABLE A (3).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—OPEN-HEARTH FURNACES

[For explanation of this table see p. 13]

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—					
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under 60	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84	
Stockers:														
1910.....	17	448	76.8	\$0.177	\$13.69	99	90	89			13	24	34	28
1911.....	17	419	77.4	.172	12.73	96	87	83		3	26	24	28	19
1912.....	17	413	77.0	.176	13.51	99	89	88			7	25	40	28
1913.....	17	417	77.8	.197	15.30	100	100	100			8	22	40	31
1914.....	22	409	77.0	.204	15.66	99	104	102			8	21	48	23
1915.....	22	366	77.3	.199	15.41	99	101	101		(1)	8	21	38	30
1917.....	13	243	77.4	.296	22.92	99	150	150				33	33	29
1919.....	17	476	75.7	.506	38.30	97	257	250		10		22	50	18
1920.....	19	573	70.9	.573	40.18	91	291	263		26		9	17	39
1922.....	22	647	73.9	.379	28.07	95	192	183		4		29	19	27
1924.....	26	781	58.2	.540	31.37	75	274	206		7	78	2	4	4

¹ Less than 1 per cent.

² Including less than 1 per cent whose full-time hours per week were 89.

TABLE A (3).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—OPEN-HEARTH FURNACES—Continued

Occupation and year	Number of plants	Number of employ-ees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—						
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84		
Stock crane-men:															
1910.....	13	75	78.8	\$0.223	\$17.60	100	94	93	.....	1	.....	3	16	40	40
1911.....	13	70	75.6	.207	15.61	96	87	83	.....	1	.....	23	10	43	23
1912.....	14	72	78.9	.228	18.02	100	96	96	.....	.....	.....	.....	11	47	42
1913.....	15	84	79.1	.238	18.85	100	100	100	.....	.....	.....	5	10	45	40
1914.....	20	98	78.4	.237	18.58	99	100	99	.....	.....	.....	4	12	49	35
1915.....	20	94	77.4	.233	19.77	98	106	105	.....	.....	.....	4	23	47	26
1917.....	11	64	77.4	.338	26.11	98	142	139	.....	.....	.....	.....	38	34	28
1919.....	15	115	75.2	.566	41.81	95	234	222	.....	10	.....	.....	22	55	13
1920.....	17	150	67.8	.686	47.02	86	288	249	.....	35	.....	12	11	35	7
1922.....	20	178	73.3	.460	33.85	93	193	180	.....	13	.....	10	25	38	14
1924.....	25	228	57.3	.647	36.97	72	272	196	.....	86	.....	2	3	7	1
Charging-machine operators:															
1910.....	17	73	76.8	.294	22.52	98	88	86	.....	.....	.....	8	34	27	30
1911.....	17	72	74.7	.287	21.37	96	86	82	.....	.....	.....	25	25	33	17
1912.....	17	72	75.8	.312	23.67	97	93	91	.....	.....	.....	14	36	25	25
1913.....	17	76	78.0	.335	26.12	100	100	100	.....	.....	.....	13	16	42	39
1914.....	22	86	77.4	.307	23.66	99	92	91	.....	.....	.....	5	33	33	30
1915.....	22	86	77.7	.330	25.55	100	99	98	.....	.....	.....	5	30	33	33
1917.....	13	64	77.1	.467	35.91	99	139	137	.....	.....	.....	.....	44	28	28
1919.....	17	98	75.3	.753	56.70	97	225	217	.....	10	.....	.....	24	48	2
1920.....	19	137	67.2	.895	59.83	86	267	229	.....	38	.....	4	14	42	2
1922.....	22	133	72.2	.625	45.09	93	187	173	.....	16	.....	12	31	23	19
1924.....	26	203	56.3	.863	48.43	72	268	185	.....	4	88	.....	3	2	2
Door operators:															
1910.....	15	165	75.9	.101	7.72	99	90	89	.....	.....	.....	12	38	22	28
1911.....	15	160	75.5	.100	7.55	98	89	87	.....	.....	.....	21	24	31	24
1912.....	15	157	76.0	.102	7.72	99	91	89	.....	.....	.....	20	28	21	31
1913.....	15	160	76.9	.112	8.68	100	100	100	.....	.....	.....	20	19	28	34
1914.....	19	170	77.0	.109	8.35	100	97	96	.....	.....	.....	14	24	32	31
1915.....	19	176	76.5	.111	8.43	99	99	97	.....	.....	.....	14	25	38	24
1919.....	15	165	73.8	.321	23.69	98	237	273	.....	.....	.....	.....	41	24	22
1920.....	16	264	66.1	.402	26.27	86	359	303	.....	14	.....	10	13	26	4
1922.....	16	288	70.1	.279	19.76	91	249	228	.....	5	14	.....	30	38	8
1924.....	16	346	55.0	.381	21.22	72	340	244	.....	7	89	.....	3	3	16
Melters' helpers, first:															
1910.....	17	341	77.7	.416	32.27	101	95	95	.....	.....	.....	7	22	40	31
1911.....	17	338	75.3	.400	30.12	98	91	89	.....	.....	.....	17	21	49	13
1912.....	17	347	76.5	.417	31.89	99	95	94	.....	.....	.....	2	24	55	19
1913.....	17	364	77.1	.440	33.89	100	100	100	.....	.....	.....	3	16	55	98
1914.....	22	404	75.6	.420	31.60	98	95	93	.....	9	.....	.....	14	62	15
1915.....	22	422	75.5	.437	32.80	98	99	97	.....	10	.....	.....	13	63	14
1917.....	13	272	76.3	.586	44.36	99	133	131	.....	.....	.....	.....	54	13	33
1919.....	17	402	74.9	.966	72.35	97	220	213	.....	11	.....	.....	34	33	22
1920.....	19	620	69.4	1.089	75.09	90	248	222	.....	33	.....	.....	6	60	7
1922.....	22	622	71.4	.775	55.34	93	176	163	.....	15	.....	1	46	32	5
1924.....	26	885	55.5	1.064	59.16	72	242	175	.....	95	.....	.....	2	4	.....
Melters' helpers, second:															
1910.....	17	339	76.6	.272	20.87	100	93	93	.....	.....	.....	8	38	22	18
1911.....	17	335	74.5	.263	19.62	97	90	88	.....	.....	.....	35	21	21	28
1912.....	17	347	75.8	.274	20.77	99	94	93	.....	.....	.....	20	37	14	23
1913.....	17	360	76.7	.292	22.36	100	100	100	.....	.....	.....	19	29	14	37
1914.....	22	402	74.5	.291	20.70	97	95	93	.....	9	.....	.....	15	25	29
1915.....	22	420	74.5	.291	21.57	97	100	97	.....	10	.....	14	24	20	26
1917.....	13	272	75.9	.397	29.93	99	136	134	.....	.....	.....	.....	54	31	21
1919.....	17	410	74.4	.693	51.56	97	237	231	.....	12	.....	.....	33	30	26
1920.....	19	721	68.1	.781	53.80	90	267	241	.....	34	.....	3	3	55	1
1922.....	22	704	71.2	.557	39.50	93	191	177	.....	16	.....	12	47	21	5
1924.....	26	1,072	55.3	.758	41.98	72	260	188	.....	2	94	.....	47	2	3

OPEN-HEARTH FURNACES

TABLE A (3).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—OPEN-HEARTH FURNACES—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—							
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	60	Over 60 and under 72	Over 72 and under 84	84		
Melters' helpers, third:																
1910	17	393	76.5	\$0.196	\$14.97	98	92	89				8	36	30	27	
1911	17	394	73.9	.185	13.67	95	86	82				20	37	36	8	
1912	17	414	75.4	.199	15.01	97	93	90				7	30	46	16	
1913	16	458	77.0	.214	16.64	100	100	100				1	25	38	36	
1914	21	442	77.4	.207	15.98	99	97	96					39	30	31	
1915	21	454	77.7	.212	16.44	100	99	99					38	29	33	
1917	11	268	77.5	.328	25.26	99	153	152					44	20	36	
1919	17	602	76.6	.532	40.75	98	249	245		6			30	36	28	
1920	19	970	67.8	.645	43.64	87	301	262		38		2	12	46	1	
1922	22	980	72.9	.432	31.44	94	202	189		10	2	13	35	19	21	
1924	26	1,329	55.5	.601	33.39	71	281	201		1	92		1	3	1	2
Stopper setters:																
1910	10	30	76.2	.313	23.63	99	96	94					37	57	7	
1911	10	29	73.5	.313	23.11	95	96	92					28	21	52	
1912	10	29	75.8	.329	24.92	98	101	99					21	72	7	
1913	9	30	77.3	.325	25.10	100	100	100					13	80	7	
1914	10	32	75.0	.287	21.46	97	88	86					63	25	13	
1915	10	32	74.6	.296	21.96	97	91	88				25	38	25	13	
1917	8	36	75.3	.414	30.90	97	127	123					67	11	22	
1919	10	45	73.8	.684	50.48	95	210	201		16			36	47	22	
1920	12	71	68.4	.778	53.17	88	239	212		34			13	42	11	
1922	17	83	70.9	.561	39.73	92	173	153		7	13		12	33	18	
1924	21	123	55.1	.763	42.07	71	235	168		5	89				3	
Steel pourers:																
1910	14	47	75.3	.308	23.05	98	83	81					11	49	17	23
1911	14	44	73.7	.304	22.32	96	82	78					23	27	41	9
1912	15	50	76.5	.321	24.57	99	87	86					20	24	28	28
1913	16	56	77.0	.370	28.46	100	100	100					4	25	46	25
1914	21	70	76.4	.359	25.94	99	92	91					11	37	29	23
1915	21	70	75.7	.356	26.99	98	96	95					11	43	29	17
1917	12	48	76.0	.466	35.60	99	126	125						54	25	21
1919	17	69	73.2	.796	58.27	95	215	205		16			32	42	10	
1920	18	112	68.0	.929	62.31	88	251	219		36			13	50	2	
1922	21	101	70.4	.645	45.48	91	174	160		4	18		9	28	26	16
1924	25	147	56.5	.837	47.38	73	226	166		13	76			3	4	4
Mold cappers:																
1910	8	40	76.5	.217	16.49	97	85	82						55	15	30
1911	8	38	74.0	.215	15.78	94	84	79					21	26	42	11
1912	9	52	79.3	.228	18.00	101	89	90					15	8	27	50
1913	12	68	78.6	.255	20.04	100	100	100					6	12	41	41
1914	13	70	77.7	.232	17.96	99	91	90					11	26	31	31
1915	13	72	76.1	.254	19.24	97	100	96					11	42	28	19
1917	6	38	76.7	.364	28.16	98	143	141						58	5	37
1919	11	97	74.3	.588	43.69	95	281	218		11			25	60	4	
1920	7	73	70.0	.635	44.65	89	249	223		23			4	73	---	
1922	8	92	65.5	.460	31.33	83	180	156		14	16		12	15	42	---
1924	7	86	55.0	.609	34.21	70	239	171		44	56				---	---
Ladle crane-men:																
1910	16	90	77.2	.294	22.76	100	86	86					9	28	31	32
1911	16	86	74.6	.287	21.32	97	84	81					24	34	23	19
1912	16	90	76.2	.317	24.22	99	93	92					70	32	31	27
1913	17	90	77.2	.341	26.34	100	100	100					9	18	44	29
1914	22	104	76.5	.305	23.34	99	89	89					6	24	47	23
1915	22	107	76.0	.327	24.92	98	96	95					6	29	47	19
1917	13	82	76.4	.466	35.64	99	137	135						51	24	24
1919	17	119	75.6	.733	55.41	98	215	210		8				30	51	13
1920	19	146	68.3	.837	56.63	88	245	215		36			3	17	42	2
1922	21	153	72.9	.588	42.83	94	172	163		12			13	33	24	17
1924	25	239	55.2	.832	46.06	72	244	175		6	80			2	3	1

TABLE A (3).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—OPEN-HEARTH FURNACES—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—						
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	60	Over 60 and under 72	Over 72 and under 84	84	
Ingot strippers:															
1910.....	15	46	73.7	\$0.275	\$19.88	99	93	91	7			22	30	17	24
1911.....	15	51	71.9	.256	18.06	97	86	83		6		8	63	20	4
1912.....	15	55	72.9	.278	19.99	98	94	92		5			69	18	7
1913.....	15	61	74.5	.296	21.85	100	100	100		5			46	30	20
1914.....	18	47	75.8	.292	21.72	102	99	99		6			30	47	17
1915.....	18	48	76.3	.303	22.76	102	102	104		6			29	42	23
1917.....	13	39	70.9	.449	30.85	95	162	141		23			36	16	26
1919.....	15	48	69.9	.749	52.36	94	263	240		33			17	46	4
1920.....	16	71	69.3	.790	54.21	93	267	248	1	34			11	32	21
1922.....	18	65	72.8	.559	40.61	98	189	186		15		6	26	32	20
1924.....	20	98	57.8	.726	42.11	78	245	193	8	76			2	7	7
Engineers, locomotive:															
1910.....	14	107	77.3	.244	18.92	101	83	84				6	23	45	26
1911.....	15	114	74.3	.247	18.32	97	84	81				38	19	35	8
1912.....	15	117	75.8	.262	19.86	99	89	88				14	10	67	9
1913.....	16	119	76.6	.295	22.55	100	100	100				12	19	52	17
1914.....	21	137	76.5	.281	21.51	100	95	95				10	20	48	21
1915.....	21	138	77.1	.279	21.57	101	95	96				6	21	49	24
1919.....	17	166	75.6	.666	50.35	99	226	223		4			40	40	16
1920.....	18	214	69.6	.732	50.83	91	248	225		27		22	11	37	3
1922.....	20	219	71.4	.527	37.62	93	179	167		19		7	42	16	16
1924.....	23	325	55.4	.700	38.73	72	237	172	11	82		1	2	2	2
Switchmen:															
1910.....	14	109	77.3	.185	14.29	101	80	81				6	22	44	28
1911.....	15	117	74.4	.186	13.85	98	81	79				38	19	34	9
1912.....	15	118	75.2	.199	14.92	99	87	85				15	19	56	10
1913.....	16	127	76.3	.230	17.55	100	100	100				13	23	49	16
1914.....	21	149	76.5	.226	17.29	100	98	99				11	23	44	22
1915.....	21	150	77.0	.225	17.33	101	98	99				5	25	45	25
1919.....	17	194	76.2	.555	42.29	100	241	241		2			40	39	19
1920.....	18	297	69.3	.617	42.84	91	263	244		27		19	11	41	2
1922.....	20	275	72.0	.439	31.61	94	191	180		13		11	39	19	18
1924.....	23	406	56.0	.586	32.80	73	255	187	12	80		2	1	1	3
Laborers:															
1910.....	17	1,038	74.5	.157	11.69	98	84	82		4	6	20	13	35	22
1911.....	17	806	73.2	.161	11.78	96	86	83		4	7	24	15	37	14
1912.....	17	948	74.7	.164	12.21	98	88	86		6	5	13	17	39	20
1913.....	17	1,109	76.2	.187	14.24	100	100	100		4	4	6	25	31	30
1914.....	22	805	69.5	.185	12.84	91	99	90	(1)	11	27	14	4	34	9
1915.....	22	723	70.8	.186	13.19	93	99	93		8	21	22	6	30	13
1917.....	13	653	74.4	.292	21.73	98	156	153				22	20	38	20
1919.....	17	1,266	76.2	.463	35.66	100	250	250		3	6	7	7	56	20
1920.....	18	1,393	68.5	.525	36.21	90	281	254		27	2	22	3	43	2
1922.....	21	992	67.9	.354	24.22	89	189	170	1	17	15	24	18	17	7
1924.....	25	2,037	59.0	.434	25.73	77	232	181	3	41	11	40		3	1

¹ Less than 1 per cent.

The customary working time per week of all employees covered in the open-hearth furnaces in each of the 5 years, 1914, 1915, 1920, 1922, and 1924,² has been classified, and the number and per cent of employees coming under each classification are shown in Table B (3).

While an open-hearth furnace is not necessarily in continuous operation, a considerable number of plants usually operate 7 days per week. Most of the plants which are shut down for the week end are only partly closed, and many employees are necessary to watch the

² These 5 years are the only ones in which data were collected covering all principal productive and other occupations.

furnaces during that time. These turns are known as gas turns and result in a large amount of 7-day week work in this department.

Of the 11,611 employees covered in 1924, 6,048, or 52 per cent, worked 7 days per week regularly as compared with only 27 per cent in 1922 and 34 per cent in 1914. This represents a large increase in continuous employment in 1924 and is due in large measure to the elimination of the 12-hour day in many plants and the substitution of the shorter shifts of from 8 to 10 hours.

The combinations of 6 days, 6 days, and 7 days and 6 days, 7 days, and 7 days per week in rotation also show large increases in the number of employees who worked on that basis. These combinations were brought about by plants adopting the three 8-hour shifts and giving employees 1 or 2 relief turns in a 3-week period.

TABLE B (3).—NUMBER AND PER CENT OF EMPLOYEES WHO CUSTOMARILY WORKED EACH SPECIFIED NUMBER OF DAYS PER WEEK, 1914 TO 1924, BY DISTRICT AND YEAR—OPEN-HEARTH FURNACES

[For explanation of this table see p. 13]

District and year	Number of plants	Number of employees	Number of employees whose customary working days per week were—						Per cent of employees whose customary working days per week were—									
			5	5 and 6 alternately	6	5 and 7 alternately	6 and 7 alternately	6, 6, and 7, in rotation	6, 7, and 7, in rotation	7	5	5 and 6 alternately	6	5 and 7 alternately	6 and 7 alternately	6, 6, and 7, in rotation	6, 7, and 7, in rotation	7
Eastern:																		
1914	6	1,064			635		215		214			60		20				20
1915	6	1,116	2	2	655		225	3	229	(1)	(1)	59		20	(1)			21
1920	4	1,955		12	630	13	202		80		1	66	1	21			2	8
1922	5	1,241	1		699		412		96	(1)		56		33			3	8
1924	5	987			579		253	82	24			59		26	8		2	5
Pittsburgh:																		
1914	6	2,149			468		852	10	819			22		40	(1)			38
1915	6	2,013			404		814		795			20		40				39
1920	6	3,190			670		2,049		244		227	21		64			7	8
1922	5	2,554			1,104		944		226		16	43		37	9		1	10
1924	7	4,361			269		466	1,177	413		2,036	6		11		27	9	47
Great Lakes and Middle West:																		
1914	7	1,632			751		311		570			46		19				35
1915	7	1,755			846		356		553			48		20				32
1920	6	3,067			214		793		2,060		7	7		26				67
1922	9	3,678			1,843			112	153		1,565	50			3	4		43
1924	10	4,943			772		12	116	702		3,341	16		(1)	2	14		68
Southern:																		
1914	3	570			269		38		9		254	47		7			2	45
1915	3	539			226		58		3		252	42		11			1	47
1920	3	958			655		1		302			68		(1)				32
1922	3	825			484		4		337			59		(1)				41
1924	4	1,320			258		5		435		622	20		(1)			33	47
Total:																		
1914	22	5,415			2,123		1,416	10	9		1,857	39		26	(1)	(1)		34
1915	22	5,423	2	2	2,131		1,453	3	3		1,829	(1)	(1)	39	(1)	(1)		34
1920	19	8,170		12	2,169	13	3,045		245		2,686	27		37		3		33
1922	22	8,298	1		4,135		1,360	338	202		2,262	(1)		50		4		27
1924	26	11,611			1,878		736	1,375	1,574		6,048	16		6	12	14		52

¹ Less than 1 per cent.

Table C (3) presents the most significant facts relative to earnings and hours of labor of employees in the principal productive occupations in the 26 open-hearth furnace plants covered in 1924. The occupations have been arranged as nearly as possible in the order of production, and figures are shown for each district and all districts combined for each occupation.

Referring to the first occupation presented, stockers, the 515 positions were kept filled by a total of 781 men during the pay period scheduled. As stated in the explanation of this table, on page 14, many of the employees worked only part time in this occupation, and 781 men were necessary to keep the 515 positions filled. However, it must not be assumed that these employees worked only as stockers during the period. A large percentage of them worked in other occupations, and the number of employees shown in the separate occupations in the following table can not be combined as the number of employees who worked in the principal productive occupations in this department.

The average customary full time of the 781 men working in the 515 positions was 6.7 turns per week, 8.7 hours per turn, and 58.2 hours per week. These averages are for all districts combined and do not show the extreme range of the figures for the several districts. The average full-time hours per week in the Great Lakes and Middle West district, for example, was only 54.9, while in the Southern district the average was 70.8 hours.

In the distribution of the customary working time of the 781 employees, 667, or 85 per cent, worked 56 hours per week or less, while the remaining 114, or 15 per cent, ranged from over 60 to 84 hours per week.

The average hourly earnings of stockers ranged from 40.7 cents in the Southern district to 59.4 cents in the Great Lakes and Middle West district, with an average of 54 cents for all districts combined. Average earnings for the half-month period reached the high point in the Great Lakes and Middle West district, \$53.05, and employees in the Eastern district worked more hours at this occupation than those in any of the other three districts, or an average of 118.8 hours. These averages are only for the occupation under consideration, and do not include earnings that employees may have made in other occupations during the same period.

The range for average full-time earnings per week for stockers was from \$28.80 in the Southern district to \$32.63 in the Great Lakes and Middle West district. The average for all districts was \$31.37.

TABLE C (3).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND DISTRICT—OPEN-HEARTH FURNACES

[See explanation on p. 3 of adjustment of time worked and earnings received]

Occupation and district	Number of plants	Positions			Employees working in scheduled pay period (16 days) at specified occupation													Average full-time earnings per week			
		Number	Average customary full time of employees in the positions			Number	Number whose customary full-time hours per week were—								Average hours worked	Average earnings in pay period	Average earnings per hour				
			Turns per week	Hours per turn	Hours per week		48	Over 48 and under 56	56	Over 56 and under 60	60	Over 60 and under 72	72	Over 72 and under 84					84 and over		
Stockers:																					
Eastern.....	5	52	6.1	11.0	67.4	71	6	11						10	29	15		118.8	\$51.50	\$0.434	\$29.22
Pittsburgh.....	7	182	6.7	8.4	56.3	288	22	117	128							21		78.4	43.68	.557	31.38
Great Lakes and Middle West.....	10	231	6.8	8.1	54.9	323	26	38	259									89.3	53.05	.594	32.63
Southern.....	4	50	6.9	10.2	70.8	99		44	16				6					82.6	33.60	.407	28.80
Total.....	26	515	6.7	8.7	58.2	781	54	210	403				16	29	36	33		87.1	46.99	.540	31.37
Stock cranimen:																					
Eastern.....	5	20	6.3	10.9	67.3	25		5					4	7	9			124.9	60.03	.480	32.57
Pittsburgh.....	7	65	6.7	8.4	56.2	95		50	37						8			87.2	55.25	.633	35.60
Great Lakes and Middle West.....	10	77	6.8	8.1	54.8	93		27	66									101.0	73.08	.724	39.66
Southern.....	3	8	7.0	9.0	63.0	15			12						3			76.3	43.87	.575	36.23
Total.....	25	170	6.7	8.6	57.3	228		82	115				4	7	17	3		96.3	62.30	.647	36.97
Charging-machine operators:																					
Eastern.....	5	19	6.3	10.1	63.8	23	9		3					6	5			111.9	69.10	.618	39.41
Pittsburgh.....	7	57	6.7	8.0	54.1	63		30	33									112.0	95.45	.852	46.09
Great Lakes and Middle West.....	10	76	6.8	8.0	54.8	91		24	67									104.2	100.54	.965	52.87
Southern.....	4	17	6.9	8.9	61.6	26		12	9						5			94.9	71.64	.755	46.51
Total.....	26	169	6.7	8.3	56.3	203	9	66	112					6	5	5		106.3	91.70	.863	48.43
Door operators:																					
Pittsburgh.....	5	61	6.7	8.2	55.8	76		53	13				10					97.6	31.42	.322	17.97
Great Lakes and Middle West.....	8	134	6.8	8.0	54.2	215	24	34	157									76.1	31.11	.409	22.15
Southern.....	3	23	6.8	8.5	58.4	55		27	25						3			59.0	22.30	.378	22.09
Total.....	16	218	6.8	8.1	55.1	346	24	114	195				10			3					

Melter's helpers, first:																					
Eastern	5	53	6.3	9.9	63.5	69		33						15	21		122.4	100.41	.820	52.08	
Pittsburgh	7	264	6.6	8.0	53.8	329		176	153								92.7	100.60	1.085	58.39	
Great Lakes and Middle West	10	315	6.8	8.0	55.0	388		100	288								99.2	110.28	1.111	61.12	
Southern	4	68	6.8	8.5	57.9	99		50	38								85.7	87.27	1.018	58.92	
Total	26	705	6.7	8.2	55.5	855		359	479					15	32		97.1	103.34	1.064	59.16	
Melter's helpers, second:																					
Eastern	5	53	6.2	9.9	62.1	69	21	12						19	17		117.7	74.77	.635	39.45	
Pittsburgh	7	264	6.6	8.0	53.6	419		209	210								720.0	55.81	.775	41.54	
Great Lakes and Middle West	10	315	6.8	8.0	55.0	471		113	358								80.7	63.28	.784	43.10	
Southern	4	68	6.8	8.5	57.9	113		51	51								71.7	50.11	.699	40.47	
Total	26	705	6.7	8.2	55.3	1,072	21	385	619					19	28		78.8	59.71	.758	41.98	
Melter's helpers, third:																					
Eastern	5	53	6.2	10.2	62.9	75	15	10						34	16		94.5	47.28	.501	31.49	
Pittsburgh	7	259	6.6	8.0	53.3	460		257	203								64.9	43.02	.653	35.34	
Great Lakes and Middle West	10	337	6.8	8.0	54.8	613		144	469								68.1	42.28	.621	34.04	
Southern	4	85	6.8	8.9	60.4	181		129	16					11			71.2	31.83	.447	27.00	
Total	26	734	6.7	8.3	55.5	1,329	15	540	688					11	34	16	25	68.9	41.39	.601	33.39
Stopper setters:																					
Eastern	2	5	6.4	9.6	59.2	7		3						4			98.5	56.17	.571	33.77	
Pittsburgh	5	27	6.6	8.0	53.3	38		18	20								85.0	62.98	.741	39.50	
Great Lakes and Middle West	10	48	6.8	8.1	54.5	61	6	12	43								90.5	78.42	.788	42.87	
Southern	4	11	6.9	8.7	60.4	17		5	8								89.1	70.90	.795	48.04	
Total	21	91	6.7	8.2	55.1	123	6	38	71					4		4	93.5	71.34	.763	42.07	
Steel pourers:																					
Eastern	4	12	6.3	10.7	69.2	13		3						4	6		137.3	86.22	.628	43.46	
Pittsburgh	7	42	6.5	8.0	52.5	57	13	20	24								89.8	76.41	.851	44.69	
Great Lakes and Middle West	10	47	6.8	8.1	54.8	57	6	4	47								102.3	88.66	.867	47.51	
Southern	4	13	6.8	9.2	63.4	20		10	4								89.9	81.17	.903	57.24	
Total	25	114	6.7	8.4	56.5	147	19	37	75					4	6	6	98.8	82.68	.837	47.38	
Mold cappers:																					
Pittsburgh	2	16	6.2	8.0	62.2	22	17		5								79.8	56.55	.709	44.09	
Great Lakes and Middle West	5	56	6.5	8.1	53.0	64	21		43								97.9	56.92	.581	30.81	
Total	7	72	6.4	8.1	55.0	86	38		48								93.3	56.82	.609	34.21	
Lead crane men:																					
Eastern	5	28	6.2	9.4	58.6	34	12	10						4	8		107.4	67.17	.626	36.67	
Pittsburgh	6	61	6.6	8.0	53.4	69		38	31								107.4	86.09	.801	42.79	
Great Lakes and Middle West	10	84	6.8	8.0	55.0	109		24	85								97.5	89.66	.920	50.57	
Southern	4	19	6.8	8.4	57.5	27		17	8								102.2	86.54	.847	48.71	
Total	25	192	6.7	8.3	55.2	239	12	89	124					4	8	2	102.3	85.08	.832	46.06	

TABLE C (3).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND DISTRICT—*OPEN-HEARTH FURNACES*—Continued

Occupation and district	Number of plants	Positions			Employees working in scheduled pay period (16 days) at specified occupation											Average full-time earnings per week				
		Number	Average customary full-time of employees in the positions			Number	Number whose customary full-time hours per week were—								Average hours worked		Average earnings in pay period	Average earnings per hour		
			Turns per week	Hours per turn	Hours per week		48	Over 48 and under 56	56	Over 56 and under 60	60	Over 60 and under 72	72	Over 72 and under 84					84 and over	
Ingot strippers:																				
Eastern	2	7	6.4	12.0	76.3	9											130.8	\$73.14	\$0.559	\$42.67
Pittsburgh	6	25	6.7	8.0	53.4	29	8	6	15								105.8	83.65	.791	42.21
Great Lakes and Middle West	9	42	6.9	8.1	55.2	49		15	34								103.4	76.21	.737	40.69
Southern	3	7	6.9	10.3	70.9	11			4								104.0	69.98	.673	47.71
Total	20	81	6.8	8.6	57.8	98	8	25	49					2	7	7	106.7	77.43	.726	42.11
Engineers, locomotive:																				
Eastern	4	18	6.1	10.4	63.8	22	6			2							119.2	67.43	.566	36.10
Pittsburgh	7	111	6.5	8.0	52.6	137	29	64	44					7	7		98.2	69.67	.710	37.33
Great Lakes and Middle West	8	96	6.9	8.0	55.0	123		51	72								98.9	69.63	.704	38.73
Southern	4	36	6.9	8.9	60.8	43		20	13				3				119.8	87.73	.732	44.51
Total	23	261	6.6	8.3	55.4	325	35	135	129	2			3	7	7	7	102.4	71.68	.700	38.73
Switchmen:																				
Eastern	4	18	6.1	10.4	63.8	20	7			2							128.4	64.62	.503	32.12
Pittsburgh	7	114	7.0	8.0	52.9	180	42	67	71								76.3	44.35	.581	30.73
Great Lakes and Middle West	8	113	6.8	8.0	54.9	148		63	85								94.4	56.80	.602	33.02
Southern	4	38	6.9	9.5	65.1	58		30	7								99.8	59.62	.598	38.90
Total	23	283	6.9	8.4	56.0	406	49	160	163	2			7	6	5	14	88.8	52.07	.586	32.80
Laborers:																				
Eastern	4	107	6.1	9.6	58.9	154	1	96		18	14	17					92.6	35.93	.388	22.85
Pittsburgh	7	531	6.5	9.1	59.9	1,088	8	439	12	36	1	592					66.9	29.97	.448	26.83
Great Lakes and Middle West	10	332	6.7	9.5	57.6	636	54	60	109			143	180		66	24	75.8	34.11	.450	25.92
Southern	4	85	6.1	9.8	59.1	159				69	74	16					75.5	25.82	.342	20.21
Total	25	1,055	6.5	9.4	59.0	2,037	63	595	121	123	232	805			71	27	72.3	31.39	.434	25.73

Table D (3) shows the number of employees and the average and classified earnings per hour of melters' first helpers and ladle cranimen in 1924 by districts and all districts combined. These two occupations are selected as representative of the spread or variation in hourly earnings within the occupations in this department.

The average of hourly earnings for melters' first helpers in the several districts was \$1.064, and for ladle cranimen, 83.2 cents. The range of earnings in the Eastern, Pittsburgh, and Southern districts was much wider for melters' first helpers than for ladle cranimen, but in the Great Lakes and Middle West districts the range of earnings was approximately the same for each occupation.

TABLE D (3).—AVERAGE AND CLASSIFIED EARNINGS PER HOUR IN TWO SELECTED OCCUPATIONS, 1924, BY DISTRICT—*OPEN-HEARTH FURNACES*

[For explanation of this table see p. 15]

Occupation and district	Number of employees	Average earnings per hour	Number of employees whose earnings per hour were—									
			45 and under 50 cts.	50 and under 60 cts.	60 and under 70 cts.	70 and under 80 cts.	80 and under 90 cts.	90 cts. and under \$1	\$1 and under \$1.15	\$1.15 and under \$1.30	\$1.30 and under \$1.45	\$1.45 and under \$1.60	$1.60 and under $1.75
MELTERS' FIRST HELPERS												
Eastern.....	69	\$0.820	----	3	11	21	6	15	10			
Pittsburgh.....	329	1.085	----	5	7	7	34	38	141	76	15	5
Great Lakes and Middle West.....	388	1.111	----		3	5	45	89	101	93	36	9
Southern.....	99	1.018	12	9	----	3	25	9	29	19	3	----
Total.....	885	1.064	12	17	21	36	110	151	281	191	54	14
LADLE CRANEMEN												
Eastern.....	34	.626	1	17	3	12	1	----	----	----	----	----
Pittsburgh.....	69	.801	----	2	----	33	27	7	----	----	----	----
Great Lakes and Middle West.....	109	.920	----	1	6	12	50	31	----	7	2	----
Southern.....	27	.847	----	2	4	1	3	17	----	----	----	----
Total.....	239	.832	1	22	13	58	81	55	----	7	2	----

¹ Including 1 at 33 cents.

The customary turns per week and hours per turn and per week, together with the average full-time hours per week, of employees in the open-hearth furnaces are shown in detail by districts and all districts combined for the year 1924 in table E (3). The information was obtained from 26 plants and covers 11,611 employees in all occupations.

The table shows the customary number of day turns and night turns per week and the corresponding hours for each turn for each day of the week, as well as the full-time hours per week. Employees are divided into three groups as follows: (a) Those who work days only, (b) those who work nights only, and (c) those who alternate or rotate weekly from one shift to another. The order of arrangement begins with the highest average full-time hours per week.

Gas or repair turns have been disregarded when employees customarily work such turns at less frequent intervals than once every three weeks on a 3-turn basis or once every four weeks on a 2-turn

basis. In a few instances relief systems have also been omitted where the periods elapsing between reliefs were longer than three or four weeks.

In some instances in the table hours are reported for 7 days, yet the number of days worked is given as 6. This is owing to the fact that it is a 7-day occupation wherein each employee was relieved 1 day in 7 with no information available, however, as to which day; therefore, the hours for all days have been shown and the relief indicated in the full-time hours per week.

In the main the table is believed to be clear, but some points may need explanation. The first line of the table shows that in the plants canvassed 23 men in the Eastern district, 7 men in the Pittsburgh district, 10 men in the Great Lakes and Middle West district, and 5 men in the Southern district, or a total of 45 men, worked on a day job requiring them to work 7 days per week and 12 hours per day—a total of 84 hours per week. The bracketed eighth and ninth lines indicate that 9 men alternated from 6 days of 10 hours one week to 7 days of 10 hours the next week, making an average of 65 hours per week.

In the third section of the table the first line shows that 3 men in the Eastern district and 3 men in the Southern district alternated from 7 turns of 10½ hours on day work to 7 turns of 13½ hours on night work, averaging 84 hours per week. The fourth and fifth lines of this section show 17 men going from 7 day turns of 11 hours to 7 night turns of 13 hours each, followed by 7 day turns of 11 hours each and then 6 night turns of 13 hours each, making an average of 81 hours of labor per week.

When there are three 8-hour turns the second and third are tabulated as night turns.

TABLE E (3).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICTS—OPEN-HEARTH FURNACES

[For explanation of this table see p. 15]

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Turns per week	Day turns				Turns per week	Night turns				Average hours per week	Eastern	Pittsburgh	Great Lakes and Middle West	Southern	Total
	Hours					Hours									
	Monday to Friday	Saturday	Sunday	Per week		Monday to Friday	Saturday	Sunday	Per week						

EMPLOYEES WHO WORKED DAY TURNS ONLY

7	12	12	12	84	---	---	---	---	84	23	7	10	5	45
7	11½	11½	11½	80½	---	---	---	---	80½	---	---	44	2	46
7	11	11	11	77	---	---	---	---	77	---	2	2	1	5
6	12	12	---	72	---	---	---	---	72	---	2	---	---	2
7	10	10	10	70	---	---	---	---	70	10	134	174	51	369
7	9½	9½	9½	66½	---	---	---	---	66½	---	---	---	82	82
6	11	11	---	66	---	---	---	---	66	---	10	---	---	10
6	10	10	---	60	---	---	---	---	65	6	---	---	3	9
7	10	10	10	70	---	---	---	---	65	---	---	---	1	1
7	9½	9½	8	65	---	---	---	---	63	---	---	---	19	19
7	9	9	9	68	---	---	---	---	60	---	---	4	45	49
6	10	10	10	60	---	---	---	---	---	---	---	---	---	---

TABLE E (3).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICTS—OPEN-HEARTH FURNACES—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Day turns					Night turns					Average hours per week	East-ern	Pitts-burgh	Great Lakes and Middle West	South-ern	Total
Turns per week	Hours				Turns per week	Hours									
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week						

EMPLOYEES WHO WORKED DAY TURNS ONLY—Continued

6	10	10	---	60	---	---	---	---	60	28	36	132	88	284
6	10	10	10	60	---	---	---	---	60	1	---	---	---	1
6	10	9	---	59	---	---	---	---	59	21	4	28	1	64
6	10	8	---	58	---	---	---	---	58	9	---	---	---	9
6	9½	9½	---	57	---	---	---	---	57	---	14	2	81	97
6	10	5½	---	55½	---	---	---	---	55½	12	---	---	---	12
6	10	5¼	---	55¼	---	---	---	---	55¼	75	---	---	---	75
6	10	5	---	55	---	---	---	---	55	78	---	---	---	78
6	9	9	---	54	---	---	---	---	54	---	---	1	1	2
7	8	8	8	56	---	---	---	---	56	1	39	81	3	124
6	8	8	8	48	---	---	---	---	48	---	---	1	---	1
6	8	8	8	48	---	---	---	---	48	---	47	156	11	214
6	7½	7	---	44½	---	---	---	---	44½	---	3	---	---	3
6	8	4	---	44	---	---	---	---	44	---	3	---	---	3
Total	---	---	---	---	---	---	---	---	---	264	301	635	394	1,504

EMPLOYEES WHO WORKED NIGHT TURNS ONLY

---	---	---	---	---	7	12	12	84	84	---	---	25	2	27
---	---	---	---	---	7	11½	11½	80½	80½	---	---	23	---	23
---	---	---	---	---	6	10	10	70	70	---	1	5	7	13
---	---	---	---	---	6	10	10	60	60	---	---	2	---	2
---	---	---	---	---	6	10	10	60	60	1	---	---	---	1
---	---	---	---	---	6	10	10	60	60	---	---	2	3	5
---	---	---	---	---	7	8	8	56	56	---	4	9	---	13
---	---	---	---	---	6	8	8	48	48	---	---	13	---	13
---	---	---	---	---	6	8	8	48	48	---	1	---	---	1
Total	---	---	---	---	---	---	---	---	---	1	6	79	12	98

EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER

7	10½	10½	10½	73½	7	13½	13½	13½	94½	84	3	---	3	6
7	11	11	11	77	7	13	13	13	91	84	---	1	---	10
7	12	12	12	84	7	12	12	12	84	84	---	6	---	151
7	12	12	12	84	7	12	12	12	84	---	---	---	---	17
7	12	12	12	84	6	12	12	12	72	81	---	---	---	17
7	11	11	11	77	7	13	13	13	91	---	---	---	---	---
7	11	11	11	77	6	13	13	13	78	80½	3	---	---	3
7	10	10	10	70	7	13	13	13	91	80½	---	6	---	6
6	10	10	---	60	7	14	14	14	98	79	---	31	---	31
6	11	11	---	66	7	13	13	13	91	78½	---	26	---	26
7	12	12	12	84	6	12	12	12	72	78	151	---	2	153
7	10½	10½	11½	74½	6	13½	13½	13½	81	77½	46	---	---	46
7	10½	10½	10½	73½	6	13½	13½	13½	81	77½	7	---	---	7
7	10	10	10	70	7	12	12	12	84	77	---	3	---	3
7	10½	10½	6	69	6	13½	13½	13½	81	75	4	---	---	4
6	10½	10½	---	63	6	13½	13½	13½	81	72	148	---	---	148
6	11	11	---	66	6	13	13	13	78	72	57	---	---	57
7	12	12	12	84	6	10	---	---	60	72	3	---	---	3
7	10	10	10	70	7	10	10	10	70	70	---	343	95	438
6	10	10	---	60	6	13	13	13	78	69	1	---	---	1
7	10	10	10	70	6	11	---	11	66	68	19	---	---	19
6	10	10	---	60	7	10	10	10	70	70	---	---	---	70
7	10	10	10	70	6	10	10	10	60	65	---	404	---	404

TABLE E (3).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICTS—OPEN-HEARTH FURNACES—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Day turns					Night turns					Average hours per week	East-ern	Pitts-burgh	Great Lakes and Middle West	South-ern	Total
Turns per week	Hours				Turns per week	Hours									
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week						

EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER—Continued

7	10	10	10	70	6	10	10	10	60	65		5			5
6	10	10		60	7	10	10	10	70	65	2		8		10
6	10	10	10	70	6	10		10	60	63½		22			22
6	10			60											
6	10½	10½		63	6	10½		10½	63	63	8				8
6	9	9	9	63	7	9	9	9	63	63				6	6
7	9	9	9	63	7	9	9	9	63	63		5			5
6	10½	8		60½	6	10½		11¼	63¼	62½	16				16
6	10	10	10	60	6	10	10	10	60	60			45	28	73
6	10	10		60	6	10	10		60	60			176		176
6	10	10		60	6	10		10	60	60		19			26
6	10	5¼		55¼	6	10		10	60	57½	18				18
7	8	12	8	60	6	8	12	8	60	56		17			17
7	8	8	11	59	6	8	8	8	48	56					
7	8	8	8	56	6	8	8	13	61	56			383		383
7	8	8	8	56	7	8	8	8	56	56	6	1,480	2,528	261	4,275
7	8	8	8	56	7	8	8	8	56	56	3	8	389	1	351
7	8	11½	8	59½	7	8	12	8	60	55¼		8			8
7	8	11	8	59	6	8	12	8	48	55¼					
7	8	10½	8	58½	7	8	8	8	60	55¼		1			1
7	8	10½	8	58½	7	8	11	8	48	55¼		32			32
7	8	5	8	53	6	8	8	8	48	55		3			3
7	8	10	8	58	6	8	8	8	48	54		32			32
7	8	9½	8	57½	6	8	8	8	48	53¼					
7	8	8	8	56	7	8	8	8	56	53¼	14				14
7	8	8	8	56	6	8	8	8	48	53¼	24	306	46		376
6	8	8		48	7	8	8	8	56	53¼		3	273	435	711
7	8	12	8	60	6	8	8	8	48	52		56			56
7	8	8	8	56	6	8	8	8	48	52	15		4		19
7	8	11	8	59	6	8	8	8	48	51¼		7			7
7	8	10½	8	58½	6	8	8	8	48	51¼		57			57
7	8	10	8	58	6	8	8	8	48	51¼		95			95
7	8	9½	8	57½	6	8	8	8	48	51¼		8			8
7	8	9	8	57	6	8	8	8	48	51		15			15
7	8	8½	8	56½	6	8	8	8	48	50¾		15			15
7	8	8	8	56	6	8	8	8	48	50¼	82	899			981
6	8	8		48	6	8	8	8	48	50¼		3	116		119
6	8	12		52	6	8	8	8	48	49¼		3			3
6	8	8		48	6	8	8	8	48	48	89	127	206		422
6	8	8		48	6	8	8	8	48	48			4		4
Total											722	4,054	4,229	914	9,919

Of the total number of open-hearth furnace employees reported, 6,028, or 52 per cent, worked 7 days per week all the time and 3,705 or 32 per cent, worked a week of 7 turns at least once every three or four weeks. As to hours of labor, 753, or 6 per cent of all employees, worked 12 hours per day, 2,143, or 18 per cent, worked 10 hours per day, and 8,376, or 72 per cent, worked a day of 8 hours.

Of the 753 12-hour workers, 246 worked 7 days per week and 242 worked a 7-day week part of the time. Of the 2,143 employees who worked a day of 10 hours, 820 worked 7 days per week and 516 worked 7 days per week a part of the time. A large majority of the 8,376 8-hour workers worked 7 days per week—4,766 all the time, and 2,946 a part of the time. The basic figures are set forth by districts in the following table. A few minor groupings do not appear in this summary.

In preparing the summary the regular hours per turn an employee worked on Monday to Friday are considered, regardless of the length of his turn Saturday and Sunday.

SUMMARY OF PRINCIPAL GROUPS IN TABLE E (3)

Item	Number of employees who worked specified days and hours					Per-cent of total
	East-ern dis-trict	Pitts-burgh dis-trict	Great Lakes and Middle West dis-trict	South-ern dis-trict	Total	
Total open-hearth furnace employees.....	987	4,361	4,943	1,320	11,611	100
Employees who worked—						
7-day week all the time.....	46	2,036	3,341	605	6,028	52
7-day week part of the time.....	362	2,056	830	457	3,705	32
12 or more hours per day.....	446	76	41	190	753	6
7-day week and 12 or more hours per day all of the time.....	26	14	35	171	246	2
7-day week and 12 or more hours per day part of the time.....	157	60	6	19	242	2
10-hours per day.....	278	968	671	226	2,143	18
7-day week and 10 hours per day all the time.....	10	478	274	58	820	7
7-day week and 10 hours per day part of the time.....	31	462	14	9	516	4
8 hours per day.....	220	3,286				
7-day week and 8 hours per day all the time.....	10	1,534	4,159	711	8,376	72
7-day week and 8 hours per day part of the time.....	121	1,568	2,957	265	4,766	41
			822	435	2,946	25

PUDDLING MILLS

Data for 1924 were collected from the pay rolls of 17 puddling mills and cover 3,428 employees in all occupations. Of the total number of employees reported, 2,828 are found in the principal productive occupations for which separate figures are given. Wages and hours of labor in this department were first obtained for the year 1914 and comparative figures are presented for the years 1914 to 1924.¹

Considering the principal productive occupations as a whole, the average full-time hours per week of employees remained unchanged in 1924 as compared with 1922 and is only 4 per cent less than in 1914, the first year in which information was obtained for this department. Prior to the summer of 1923 the 12-hour shift had been practically eliminated, and the general reduction in hours of labor in the iron and steel industry in the latter part of that year did not affect employees in this department.

The study shows that there was an increase of 51 per cent in earnings per hour in 1924 as compared with 1922, and the 1924 average is 134 per cent greater than that for 1914—in other words, approximately $2\frac{1}{3}$ times the hourly earnings of 1914. The increase in the 1924 earnings, however, did not equal the decrease in 1922, and the average hourly earnings for 1919 and 1920 are still higher than the 1924 figures.

The puddling mill produces wrought iron by oxidizing and removing most of the silicon, carbon, manganese, and phosphorus contained in pig iron, the operation being conducted on the hearth of a reverberatory furnace. On account of the intense heat and heavy labor involved in the puddling operation fewer workmen than formerly are taking up the puddling trades, as men can earn as much money in other skilled operations and work under more favorable conditions. This shortage of apprentices has been mainly responsible for the combination "level-handed" which is reflected in the number of furnaces in operation.

For several years experiments have been made with mechanical puddling devices to counteract this shortage of labor and some companies have installed equipment at considerable expense. As yet, however, no mechanical method has been devised that will produce wrought iron in large quantities with uninterrupted success.

The work of bushelers is practically the same as that of puddlers, except that scrap iron instead of pig iron is charged into the furnaces.

The most significant facts concerning average earnings and average hours in each of the principal productive occupations of puddling mills are shown in Table A (4). Rollers and their crews are not shown for every plant reported. In some plants the money for total tonnage rolled was paid in a lump sum to the roller who was responsible for the work, and in a few such instances it was impossible to get reliable data as to wages paid individuals in the rolling crew.

While the customary working time of the principal productive occupations as a whole showed no change in 1924 as compared with 1922, the average full-time hours per week were increased in some occupations and decreased in others. For example, shearmen's

¹ No data were collected for the years 1916, 1917, 1918, 1921, and 1923.

helpers in 1914 customarily worked 58 hours per week and continued to work approximately those hours until 1919. In 1920 the average of full-time hours per week was increased to 60.9, dropped to 55.1 in 1922, and was further decreased to 50.5 in 1924.

Average earnings per hour increased in each of the 20 principal productive occupations in 1924 as compared with 1922 and all other years except 1919 and 1920. The 1920 figures are higher in each occupation than those for 1924, and the averages for 1919 are greater in some occupations but lower in others. The average of earnings per hour of puddlers, level-handed, for example, was 41.6 cents in 1914 and 39.2 cents in 1915. In 1919, owing to war conditions, the average was increased to \$1.101, and this increase was continued to \$1.227 in 1920. In 1922 the average dropped back to 62.9 cents and was increased to \$1.051 in 1924. Table A (4) shows like figures for the other occupations as well.

Average full-time earnings per week followed very closely the course of average earnings per hour, as changes in full-time hours per week were very slight as compared with those in hourly earnings.

Puddling mills are usually in operation 6 days and 5 nights per week with an average turn of about 9 hours in length, and Table A (4) shows that the hours worked by these employees as a whole were quite generally less than those worked in other departments, except sheet and tin-plate mills. Only two occupations, stockers and roll engineers, show any employees working over 72 hours per week in 1924, and in only one occupation, roll engineers, are any employees reported who had a working week of as many as 84 hours.

Index numbers for full-time hours per week, earnings per hour, and full-time earnings per week are also contained in Table A (4). These are simply percentages computed from the averages presented in the table, using the average for 1914 as the base or 100 per cent. The index numbers for this department as a whole (all selected occupations combined) are shown on page 5.

TABLE A (4).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1914 TO 1924, BY OCCUPATION—PUDDLING MILLS

[For explanation of this table see p. 13]

Occupation and year	Number of plants	Number of employ-ees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1914=100)			Per cent of employees whose average full-time hours per week were—								
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under 60	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84				
Stockers:																	
1914	28	300	57.6	\$0.205	\$11.78	100	100	100	12	45	11	30	1				
1915	28	304	58.1	.204	11.85	101	100	101	10	42	12	34	1				
1919	11	141	59.9	.486	29.11	104	237	247	11	11	15	61	2				
1920	15	407	61.3	.504	31.30	106	246	266	1	12	29	55	3				
1922	13	214	58.9	.396	23.64	102	193	201	8	32	7	53	(1)				
1924	17	188	57.4	.480	27.50	100	234	233	1	59	13	27	1				
Puddlers:																	
1914	13	458	54.8	.416	22.76	100	100	100	2	98							
1915	13	422	52.4	.390	20.45	96	94	90	2	98							
1919	7	176	50.9	1.126	57.31	93	271	252	31	69							
1920	8	187	49.2	1.311	64.69	90	315	284	37	63							
1922	9	203	48.5	.687	38.49	89	165	147	44	56							
1924	11	293	52.8	.912	48.10	96	219	211	3	97							

¹ Less than 1 per cent.

TABLE A (4).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1914 TO 1924, BY OCCUPATION—PUDDLING MILLS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1914=100)			Per cent of employees whose average full-time hours per week were—									
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84					
														48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84
Puddlers, level handed:																		
1914.....	17	896	49.3	\$0.416	\$20.37	100	100	100	49	51								
1915.....	17	924	48.0	.392	18.60	97	94	91	65	35								
1919.....	9	512	48.8	1.101	53.73	99	265	264	26	74								
1920.....	11	860	50.8	1.227	62.25	103	295	306	23	77								
1922.....	12	936	47.0	.629	29.22	95	151	143	59	40								
1924.....	16	1,275	45.7	1.051	48.39	93	253	238	45	55								
Puddler's helpers:																		
1914.....	15	475	55.2	.241	13.25	100	100	100	2	98								
1915.....	15	456	52.8	.224	11.78	96	93	89	2	98								
1919.....	9	190	50.6	.695	35.17	92	288	265	33	67								
1920.....	9	209	49.4	.859	42.37	89	356	320	30	70								
1922.....	9	153	48.7	.421	20.59	88	175	155	37	63								
1924.....	11	259	53.2	.690	31.28	96	245	236	4	96								
Bushelers:																		
1914.....	4	18	50.4	.462	23.14	100	100	100	33	67								
1915.....	4	19	53.6	.413	22.03	106	89	95	16	84								
1919.....	4	41	46.0	.987	45.40	91	214	196	63	37								
1920.....	2	22	44.8	1.104	49.46	89	239	214	95	5								
1922.....	4	25	45.7	.818	37.46	91	177	162	96	4								
1924.....	4	25	46.3	1.148	53.85	92	249	233	48	52								
Bushelers, level handed:																		
1914.....	6	98	47.1	.418	20.07	100	100	100	53	47								
1915.....	6	67	45.7	.419	19.37	97	100	97	64	36								
1919.....	6	197	41.4	1.573	65.12	88	376	324	99	1								
1920.....	4	179	41.4	1.894	77.85	88	453	388	96	4								
1922.....	8	206	43.4	.739	32.71	92	177	163	86	14								
1924.....	11	161	45.6	1.257	57.41	97	301	286	70	30								
Busheler's helpers:																		
1914.....	12	112	49.0	\$0.264	\$12.79	100	100	100	50	50								
1915.....	12	96	50.0	.246	12.09	102	93	95	42	58			5					
1919.....	5	82	42.6	.626	26.67	87	237	209	82	18								
1920.....	3	49	43.5	.754	32.76	89	286	256	98	2								
1922.....	6	77	44.0	.522	23.09	90	198	181	83	17								
1924.....	6	51	43.7	.674	29.76	89	255	233	71	29								
Heaters:																		
1914.....	9	25	51.0	.709	35.28	100	100	100	48	44				8				
1915.....	9	27	50.9	.730	36.37	100	103	103	44	48				8				
1919.....	1	2	55.0	1.165	64.08	108	164	182	100									
1920.....	1	4	61.8	1.426	88.13	121	201	250						100				
1922.....	2	8	53.8	.915	48.38	105	129	137	50	50								
1924.....	4	11	52.8	1.349	72.36	104	190	205	9	91								
Heaters' helpers:																		
1914.....	8	48	52.3	.311	15.63	100	100	100	50	29				13	8			
1915.....	8	52	52.3	.308	15.63	100	99	99	46	35				12	8			
1919.....	1	2	55.0	.577	31.74	105	186	203	100									
1920.....	1	18	57.0	.546	31.12	109	176	199	100									
1922.....	2	25	54.7	.450	23.99	105	145	153	100									
1924.....	4	20	54.3	.583	31.59	104	188	202	5	95								
Bloom boys:																		
1914.....	25	77	54.3	.201	10.79	100	100	100	16	73	5	6						
1915.....	25	68	53.9	.199	10.62	99	99	98	18	68	3	12						
1919.....	11	26	52.9	.656	34.70	97	326	322	27	54				19				
1920.....	13	38	53.2	.656	34.79	98	326	322	34	53	8	5						
1922.....	10	32	51.0	.365	18.20	94	182	169	41	28	16	16						
1924.....	14	36	51.7	.525	26.34	95	261	244	22	67	8	3						
Roll engineers:																		
1914.....	23	47	66.9	.239	15.92	100	100	100										
1915.....	23	45	66.9	.242	16.14	100	101	101			9	11	45	32	4			
1919.....	12	25	65.2	.535	34.88	97	224	219	12	16	4	32	12	16	8			
1920.....	12	24	72.5	.674	48.79	108	282	306			4	29	38	8	21			
1922.....	13	28	65.4	.425	27.87	98	178	175	14	7	4	54	7	14				
1924.....	14	31	64.7	.531	34.45	97	222	216	19	6	6	35	13	13	6			

TABLE A (4).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1914 TO 1924, BY OCCUPATION—PUDDLING MILLS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers. (1913=100)			Per cent of employees whose average full-time hours per week were —					
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84	
Rollers:														
1914	24	66	53.1	\$0.573	\$29.38	100	100	100	23	68	3	6		
1915	24	64	52.4	.583	29.89	99	102	102	25	63	3	9		
1919	12	38	47.0	1.843	86.62	89	322	295	53	47				
1920	12	31	50.8	2.197	108.15	96	383	368	29	68	3			
1922	12	33	48.4	.899	42.95	91	157	146	52	42	6	5		
1924	16	42	51.2	1.252	63.66	96	218	217	29	62	5	5		
Roughers:														
1914	20	71	51.9	.436	22.17	100	100	100	39	44	3	14		
1915	20	69	51.8	.426	21.69	100	98	98	41	45	3	12		
1919	8	25	45.2	1.298	58.67	87	298	265	64	36				
1920	10	33	49.7	1.407	68.75	96	323	310	39	48	12			
1922	10	43	47.2	.587	27.69	91	135	125	47	47	7			
1924	12	45	50.4	.877	43.35	97	201	196	24	64	4	7		
Catchers:														
1914	27	91	53.4	.362	18.99	100	100	100	21	69	4	5		
1915	27	88	52.8	.363	18.89	99	100	99	22	68	5	6		
1919	12	34	48.2	1.269	61.17	90	351	322	47	53				
1920	13	42	50.7	1.291	64.07	95	357	337	33	62	5			
1922	13	55	47.9	.572	27.28	90	158	144	45	51	4			
1924	16	69	50.9	.856	42.75	95	236	225	23	67	3	7		
Hook-ups:														
1914	27	97	54.4	.251	13.58	100	100	100	19	60	4	18		
1915	27	94	53.8	.233	12.40	99	93	91	19	61	4	16		
1919	12	34	51.8	.862	44.65	95	343	329	32	50		18		
1920	13	37	56.5	.868	49.64	104	346	366	8	59	5	27		
1922	12	50	48.0	.457	21.57	88	182	159	78	18	4			
1924	16	54	51.9	.638	33.02	95	254	243	19	72	4	6		
Roll hands, other:														
1914	8	17	51.9	.286	14.75	100	100	100	18	82				
1915	8	14	53.6	.295	15.86	103	103	108	21	64		14		
1919	3	11	50.7	.624	31.64	98	218	215	45	55				
1920	6	15	51.5	.946	48.94	99	331	332	27	73				
1922	5	15	51.6	.469	24.00	99	164	163	33	40	27			
1924	5	15	53.9	.559	30.12	104	195	204		73	27			
Hotbed men:														
1914	26	117	54.2	.245	13.10	100	100	100	21	59	3	16		
1915	26	112	54.2	.243	12.98	100	99	99	22	54	4	21		
1919	11	56	52.0	.655	34.06	96	267	260	27	57		16		
1920	13	81	57.0	.666	38.21	105	272	292		69	4	27		
1922	12	67	50.3	.416	20.91	93	170	160	60	30	3	7		
1924	15	84	52.5	.571	30.01	97	233	229	19	74	2	5		
Shearmen:														
1914	19	43	57.3	.239	13.70	100	100	100		60	21	19		
1915	19	39	57.8	.247	14.40	101	103	105		56	18	26		
1919	11	28	57.6	.528	30.41	101	221	222	7	57	18	18		
1920	13	45	55.2	.662	36.73	96	277	268	2	71	18	9		
1922	13	38	52.4	.455	23.75	91	190	173	42	39	8	11		
1924	16	36	52.6	.570	29.80	92	238	218	28	50	6	17		
Shearmen's helpers:														
1914	20	110	58.0	.192	11.23	100	100	100		60	9	31		
1915	20	109	58.1	.196	11.50	100	102	102		58	9	33		
1919	9	57	57.6	.473	27.24	99	246	243	12	53		35		
1920	10	70	60.9	.527	32.24	105	274	287		30	14	54	1	
1922	13	84	55.1	.385	21.09	95	201	188	24	42	6	29		
1924	16	96	50.5	.513	25.77	87	267	229	48	35	4	13		
Laborers:														
1914	24	322	59.5	.173	10.35	100	100	100		36	42	21	1	
1915	24	303	57.5	.167	9.66	97	97	93		49	35	16		
1919	12	236	64.1	.436	27.95	108	252	270	3	22	14	56	6	
1920	15	440	65.3	.457	30.41	110	264	294		9	33	22	35	
1922	12	382	59.2	.305	18.44	99	176	178		31	35	34		
1924	17	341	59.5	.355	21.31	100	205	206		44	30	26		

The customary working time per week of all employees covered in the puddling mill department in each of the 5 years, 1914, 1915, 1920, 1922, and 1924,² has been classified and the number and per cent of employees coming under each classification are shown in Table B (4).

Puddling mills are most commonly operated 6 days and 5 nights per week, although in periods of slack business the night shift is often not worked, and in some instances the day shifts in addition are reduced to 5 days per week.

In 1924, 62 per cent of all employees covered worked 5 days and 6 days per week alternately, 26 per cent worked 6 days per week, 8 per cent worked 5 days, and 2 per cent worked 5 days, 5 days, and 6 days in rotation. Very few employees in this department are continuously employed, and only 2 per cent worked 7 days per week regularly.

TABLE B (4).—NUMBER AND PER CENT OF EMPLOYEES WHO CUSTOMARILY WORKED EACH SPECIFIED NUMBER OF DAYS PER WEEK, 1914 TO 1924, BY DISTRICT AND YEAR—PUDDLING MILLS

[For explanation of this table see p. 13]

District and year	Number of plants	Number of employees	Number of employees whose customary working days per week were—							Per cent of employees whose customary working days per week were—						
			5	5 and 6 alternately	5, 5, and 6 in rotation	6	6 and 7 alternately	7	5	5 and 6 alternately	5, 5, and 6 in rotation	6	6 and 7 alternately	7		
Eastern:																
1914.....	9	1,656	388	987	-----	239	16	26	23	60	-----	14	1	2		
1915.....	9	1,506	882	402	-----	200	16	6	59	27	-----	13	1	(1)		
1920.....	4	618	1	542	-----	71	-----	4	(1)	88	-----	11	1	1		
1922.....	5	874	340	365	-----	154	4	11	39	42	-----	18	(1)	1		
1924.....	6	1,045	5	852	-----	167	8	13	(1)	82	-----	16	1	1		
Pittsburgh:																
1914.....	7	1,580	7	1,342	36	174	4	17	(1)	85	2	11	(1)	1		
1915.....	7	1,640	5	1,265	204	147	2	17	(1)	77	12	9	(1)	1		
1920.....	5	1,099	6	920	53	114	-----	6	1	84	5	10	-----	1		
1922.....	3	874	1	538	190	123	-----	22	(1)	62	22	14	-----	3		
1924.....	5	1,313	40	1,121	3	124	-----	6	19	3	85	(1)	9	(1)		
Great Lakes and Middle West:																
1914.....	8	913	-----	446	329	132	6	-----	49	36	14	1	-----	-----		
1915.....	8	850	-----	453	293	98	6	-----	53	34	12	1	-----	-----		
1920.....	3	997	6	337	377	267	2	8	1	34	38	27	(1)	1		
1922.....	2	599	4	327	235	29	2	2	1	55	39	5	(1)	(1)		
1924.....	3	515	104	7	64	337	-----	3	20	1	12	65	-----	1		
Southern:																
1914.....	5	457	205	114	-----	136	-----	2	45	25	-----	30	-----	(1)		
1915.....	5	476	206	118	-----	150	-----	2	43	25	-----	32	-----	(1)		
1920.....	3	649	3	216	-----	413	-----	17	(1)	33	-----	64	-----	3		
1922.....	3	512	135	107	-----	246	3	21	26	21	-----	48	1	4		
1924.....	3	555	129	147	-----	256	2	21	23	26	-----	46	(1)	4		
Total:																
1914.....	29	4,606	600	2,889	365	681	26	45	13	63	8	15	1	1		
1915.....	29	4,472	1,093	2,288	497	595	24	25	24	50	11	13	1	1		
1920.....	15	3,363	16	2,015	430	865	2	35	(1)	60	13	26	(1)	1		
1922.....	13	2,859	480	1,337	425	552	9	56	17	47	15	19	(1)	2		
1924.....	17	3,428	278	2,127	67	884	16	56	8	62	2	26	(1)	2		

¹ Less than 1 per cent.

² These 5 years are the only ones in which data were collected covering all principal productive and other occupations.

Table C (4) presents the most significant facts relative to earnings and hours of labor of employees in the principal productive occupations in the 17 puddling mills covered in 1924. The occupations have been arranged as nearly as possible in the order of production, and figures are shown for each district and all districts combined for each occupation.

Referring to the first occupation presented, stockers, the 152 positions were kept filled by a total of 188 men during the pay period scheduled. As stated in the explanation of this table, on page 14, many of the employees worked only part time in this occupation and 188 men were necessary to keep the 152 positions filled. However, it must not be assumed that these employees worked only as stockers during the period. Many of them worked in other occupations, and the number of employees shown in the separate occupations in the following table can not be combined as the number of employees who worked in the principal productive occupations in this department.

The average customary full time of the 188 men working in the 152 positions was 5.7 turns per week, 10.1 hours per turn, and 57.4 hours per week. These averages are for all districts combined and do not show the extreme range of the figures for the several districts. The average of full-time hours per week in the Southern district, for example, was only 52.3, while in the Great Lakes and Middle West district the average was 65.8 hours.

In the distribution of the customary working time of the 188 employees, 112, or 60 per cent, worked less than 60 hours per week, while the remaining 76, or 40 per cent, ranged from 60 to 84 hours.

The average hourly earnings of stockers ranged from 43.7 cents in the Southern district to 51.7 cents in the Pittsburgh district, with an average of 48 cents for all districts combined. Average earnings for the half-month period reached the high point in the Pittsburgh district, \$59.38, and employees in that district also worked more hours at this occupation than those in any of the other three districts, or an average of 115 hours. These averages are only for the occupation under consideration and do not include earnings that employees may have made in other occupations during the same period.

The range for average full-time earnings per week of stockers was from \$22.83 in the Southern district to \$30.07 in the Pittsburgh district. The average for all districts was \$27.50.

TABLE C (4).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND DISTRICT—PUDDLING MILLS

[See explanation on p. 3 of adjustment of time worked and earnings received]

Occupation and district	Number of plants	Positions			Employees working in scheduled pay period (16 days) at specified occupation											Average full-time earnings per week					
		Average customary full-time of employees in the positions			Number	Number whose customary full-time hours per week were—								Average hours worked	Average earnings in pay period		Average earnings per hour				
		Number	Turns per week	Hours per turn		Hours per week	44 and under	Over 44 and under 48	48	Over 48 and under 56	56	Over 56 and under 60	60					Over 60 and under 72	72	Over 72 and under 84	84 and over
Stockers:																					
Eastern.....	6	59	5.8	9.3	54.1	69	1				41	8	9	3	7			105.0	\$50.42	\$0.480	\$25.98
Pittsburgh.....	5	42	5.7	10.3	58.2	49				28				12	8		1	115.0	59.38	.517	30.07
Great Lakes and Middle West.....	3	32	5.7	11.5	65.8	44								9	35			85.6	38.74	.453	29.79
Southern.....	3	19	5.6	9.3	52.3	26				25						1		87.7	38.26	.437	22.83
Total.....	17	152	5.7	10.1	57.4	188	1			94	8	9	24	50	1	1		100.6	48.34	.480	27.50
Puddlers:																					
Eastern.....	6	170	5.5	9.6	53.0	269				269								74.9	67.69	.904	47.92
Pittsburgh.....	3	6	5.5	8.7	47.9	6	2			4								97.8	120.34	1.230	58.93
Southern.....	2	11	5.7	9.2	53.1	18	6			12								60.0	54.07	.889	47.21
Total.....	11	187	5.5	9.6	52.8	293	6	2		273		12						74.5	67.93	.912	48.10
Puddlers, level handed:																					
Eastern.....	6	163	5.3	9.2	35.6	256				256								64.4	50.02	.776	27.64
Pittsburgh.....	5	660	5.5	8.7	48.0	850		424		426								71.1	78.51	1.105	53.08
Great Lakes and Middle West.....	2	78	5.7	8.0	45.6	59	24		65									50.6	71.93	1.421	64.65
Southern.....	3	66	5.5	8.6	47.6	80	5	61			14							94.9	94.46	.995	47.38
Total.....	16	967	5.5	8.7	45.7	1,275	29	485	65	682		14						69.8	73.33	1.051	48.39
Puddlers' helpers:																					
Eastern.....	6	170	5.5	9.7	53.4	234				234								87.0	51.09	.587	31.37
Pittsburgh.....	3	6	5.5	8.7	47.9	7	3			4								77.6	71.73	.924	44.27
Southern.....	2	11	5.7	9.2	53.1	18	7			11								60.8	28.80	.474	25.14
Total.....	11	187	5.5	9.6	53.2	259	7	3		238		11						84.9	50.10	.590	31.28

TABLE C (4).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND DISTRICT—PUDDLING MILLS—Continued

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Occupation and district	Number of plants	Positions			Employees working in scheduled pay period (16 days) at specified occupation													Average full-time earnings per week		
		Number	Average customary full-time of employees in the positions			Number	Number whose customary full-time hours per week were—								Average hours worked	Average earnings in pay period	Average earnings per hour			
			Turns per week	Hours per turn	Hours per week		44 and under	Over 44 and under 48	48	Over 48 and under 56	56	Over 56 and under 60	60	Over 60 and under 72					72	Over 72 and under 84	84 and over
Rollers:																				
Eastern.....	6	15	5.5	9.6	53.1	19	2										99.9	\$93.11	\$0.932	\$49.51
Pittsburgh.....	5	12	5.5	9.0	49.4	13		6				7					106.9	160.30	1.500	74.08
Great Lakes and Middle West.....	3	5	5.3	8.7	46.7	6	4								2		80.5	131.30	1.630	76.14
Southern.....	2	4	5.3	10.6	55.1	4											115.4	164.14	1.422	78.35
Total.....	16	36	5.5	9.4	51.2	42	6	6			21		5	2	2		100.8	126.12	1.252	63.66
Roughers:																				
Eastern.....	1	8	5.5	9.6	53.0	12						12					84.0	51.95	.618	32.78
Pittsburgh.....	5	15	5.5	8.9	48.9	16		7				9					106.9	110.38	1.032	50.47
Great Lakes and Middle West.....	3	5	5.3	8.7	46.7	7	4								3		69.0	60.98	.883	41.25
Southern.....	3	8	5.5	9.7	53.1	10						8					85.1	73.89	.869	46.12
Total.....	12	36	5.5	9.2	50.4	45	4	7			29			2	3		90.1	79.00	.877	43.35
Catchers:																				
Eastern.....	5	22	5.5	9.6	53.0	33	2					24					83.8	59.39	.709	37.56
Pittsburgh.....	5	17	5.5	8.9	48.9	17		7				10					113.8	118.30	1.040	50.84
Great Lakes and Middle West.....	3	9	5.4	8.7	47.4	12	7								5		71.0	69.13	.973	46.13
Southern.....	3	6	5.5	9.9	54.1	7						5					87.0	67.20	.772	41.78
Total.....	16	54	5.5	9.3	50.9	69	9	7			39		7	2	5		89.3	76.39	.856	42.75

WAGES AND HOURS OF LABOR—IRON AND STEEL

PUDDLING MILLS

Hook-ups:	6	24	5.5	9.6	53.1	29	2		22		5				108.7	55.41	.534	28.38
Eastern.....	5	13	5.5	9.0	49.4	14		4	10						100.9	81.67	.809	39.98
Pittsburgh.....	3	6	5.5	9.1	50.2	7		4							91.2	71.69	.786	39.44
Great Lakes and Middle West.....	3																	
Southern.....	2	4	5.3	10.6	55.1	4			2		2				91.3	51.59	.565	31.14
Total.....	16	47	5.5	9.5	51.9	54	6	4	34		5	2	3		100.4	64.05	.638	33.02
Roll hands, other:	1	2	5.5	9.8	54.0	3			3						85.3	56.64	.664	35.84
Eastern.....	1	1	6.0	8.8	52.5	1			1						114.2	71.27	.624	32.77
Pittsburgh.....	3	11	5.4	10.1	54.0	11			7		4				89.1	46.72	.524	28.32
Southern.....	3																	
Total.....	5	14	5.4	10.0	53.9	15			11		4				90.0	50.34	.559	30.12
Hotbed men:	5	24	5.5	9.9	54.6	34	2		21		11				90.9	43.70	.481	26.26
Eastern.....	5	30	5.5	9.2	50.5	37		10	27						93.5	61.19	.655	33.06
Pittsburgh.....	3	7	5.5	9.4	52.4	8	4		4			4			110.0	56.44	.504	26.43
Great Lakes and Middle West.....	2	4	5.3	10.6	55.1	5			3			2			73.0	51.30	.703	38.71
Southern.....	3																	
Total.....	15	65	5.5	9.6	52.5	84	6	10	51		11	2	4		92.8	52.97	.571	30.01
Shearmen:	5	10	5.8	8.8	51.2	12	4		3	1	4				89.5	52.81	.590	30.21
Eastern.....	5	13	5.5	9.2	51.0	15	5		6				4		97.1	63.15	.651	33.18
Pittsburgh.....	3	3	5.7	10.2	58.7	3	1						2		122.7	68.95	.562	32.99
Great Lakes and Middle West.....	3																	
Southern.....	3	5	5.6	10.3	56.1	6			4			2			98.3	33.17	.338	18.93
Total.....	16	31	5.6	9.4	52.6	36	10		13	1	4	2	6		96.9	55.19	.570	29.80
Shearmen's helpers:	5	20	5.8	8.9	51.2	24	9		5	3	7				87.2	43.98	.504	25.82
Eastern.....	5	39	5.4	8.7	47.5	49	32		12				5		90.9	52.72	.580	27.84
Pittsburgh.....	3	11	5.5	9.8	55.3	12	5						7		102.8	49.53	.480	26.55
Great Lakes and Middle West.....	3																	
Southern.....	3	9	5.4	10.4	55.6	11			7			4			104.2	31.74	.305	16.94
Total.....	16	79	5.5	9.1	50.5	96	46		24	3	7	4	12		93.0	47.71	.513	25.77
Laborers:	6	56	5.8	9.2	53.3	91			75		9		7		75.7	31.05	.410	21.85
Eastern.....	5	28	5.7	10.2	58.0	45			23			20	2		75.4	31.91	.422	24.83
Pittsburgh.....	3	58	5.9	11.3	67.1	79							79		92.5	36.88	.399	26.75
Great Lakes and Middle West.....	3																	
Southern.....	3	89	5.5	10.8	58.9	126			22		20	84			95.8	26.60	.278	16.36
Total.....	17	229	5.7	10.5	59.5	341			120		29	104	88		87.0	30.86	.355	21.31

Table D (4) shows the number of employees and the average and classified earnings per hour of puddlers, level-handed, and rollers in 1924, by districts and all districts combined. These two occupations are selected as representative of the spread or variation in hourly earnings within the occupations in this department.

The average hourly earnings for puddlers, level-handed, in the several districts was \$1.051 and for rollers, \$1.252. The range of earnings for rollers was much wider than that for puddlers, level-handed, in each district.

TABLE D (4).—AVERAGE AND CLASSIFIED EARNINGS PER HOUR IN TWO SELECTED OCCUPATIONS, 1924, BY DISTRICT—*PUDDLING MILLS*

[For explanation of this table see p. 15]

Occupation and district	Number of employees	Average earnings per hour	Number of employees whose earnings per hour were—												
			'50 and under 60 cts.	60 and under 70 cts.	70 and under 80 cts.	80 and under 90 cts.	90 cts. and under \$1	\$1 and under \$1.25	\$1.25 and under \$1.50	\$1.50 and under \$1.75	\$1.75 and under \$2	\$2 and under \$2.25	\$2.25 and under \$2.60		
			Puddlers, level-handed:												
Eastern	256	\$0.776	3	64	82	77	30								
Pittsburgh	850	1.105	1	8	13	42	151	618	17						
Great Lakes and Middle West	89	1.421						4	62	23					
Southern	80	.995	1	9	7	5	13	44	1						
Total	1,275	1.051	5	81	102	124	194	666	80	23					
Rollers:															
Eastern	19	.932			6	3	4	5	1						
Pittsburgh	13	1.500		1				6		1	3	2			
Great Lakes and Middle West	6	1.630													1
Southern	4	1.422	1	1				1	1	2	1		2		
Total	42	1.252	1	2	6	3	4	12	2	3	4	4	1		

The customary turns per week and hours per turn and per week, together with the average full-time hours per week, of employees in puddling mills are shown in detail by districts and all districts combined for the year 1924 in Table E (4). The information was obtained from 17 plants and covers 3,428 employees in all occupations.

The table shows the customary number of day turns and night turns per week and the corresponding hours for each turn for each day of the week as well as the full-time hours per week. Employees are divided into three groups, as follows: (a) Those who work days only, (b) those who work nights only, and (c) those who alternate or rotate weekly from one shift to another. The order of arrangement begins with the highest average full-time hours per week.

Gas or repair turns have been disregarded when employees customarily work such turns at less frequent intervals than once every three weeks on a 3-turn basis or once every four weeks on a 2-turn basis. In a few instances relief systems have also been omitted where the periods elapsing between reliefs were longer than three or four weeks.

In some instances in the table hours are reported for 7 days, yet the number of days worked is given as 6. This is owing to the fact that it is a 7-day occupation wherein each employee was relieved 1 day in 7 with no information available, however, as to which day; therefore, the hours for all days have been shown and the relief indicated in the full-time hours per week.

In the main the table is believed to be clear, but some points may need explanation. The first line of the table shows that in the plants canvassed 1 man in the Pittsburgh district and 1 man in the Southern district were found on a day job requiring them to work 7 days per week and 12 hours per day—a total of 84 hours per week.

In the third section of the table the first line shows that 6 men in the Eastern district alternated from 7 turns of 10 hours on day work to 7 turns of 14 hours on night work, averaging 84 hours per week.

When there are three 8-hour turns the second and third are tabulated as night turns.

TABLE E (4).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—PUDDLING MILLS

[For explanation of this table see p. 15]

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Day turns					Night turns					Average hours per week	East-ern	Pitts-burgh	Great Lakes and Middle West	South-ern	Total
Turns per week	Hours				Turns per week	Hours									
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week						

EMPLOYEES WHO WORKED DAY TURNS ONLY

7	12	12	12	84						84		1		1	2
7	12	12	7	79						79				1	1
6	12	12		72						72	1		15	1	17
7	11	9	6	70						70				1	1
7	10	10	10	70						70				7	7
6	11½	11½		69						69		2			2
6	12	8		68						68			182		182
6	12	6		66						66		7			7
6	11	11		66						66		5	14		19
7	10	10	6	66						66				1	1
7	10	8	8	66						66		5			5
7	10	10	5	65						65		1	1		1
7	10	5	10	65						65		1			1
6	11½	5½		63						63	7				7
5	12			60						60				3	3
6	11	5		60						60	1				1
6	10	10		60						60	5	46	12	113	176
6	10		10	60						60		3			3
6	10	9		59						59	15			24	39
6	10½	5½		58						58			1		1
6	10	8		58						58	18	4		32	54
6	10		8	58						58		3			3
6	9¾	9		57¾						57¾				1	1
6	10	6		56						56	10				10
6	9½	8		55½						55½				8	8
5	11			55						55			1		1
6	10	5		55						55	4	10	13	13	40
6	9½	7½		55						55		2			2
6	9¾	8		54¾						54¾				10	10
6	9	9		54						54		2		1	3
6	9	8		53						53		6			6
6	9	7½		52½						52½		2			2
6	9	7		52						52				10	10
6	9	6¾		51¾						51¾	2				2
6	9	6		51						51				1	1
6	9	5		50						50	83				83
6	8½	7½		50						50				10	10
6	8½	7		49½						49½				4	4
6	8	8		48						48			98		98
6	8	7		47						47				12	12
6	8	4		44						44	9				9
5	8			40						40			7		7
Total											156	99	343	254	852

TABLE E (4).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—PUDDLING MILLS—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Day turns					Night turns					Average hours per week	Eastern	Pittsburgh	Great Lakes and Middle West	Southern	Total
Turns per week	Hours				Turns per week	Hours									
	Monday to Friday	Saturday	Sunday	Per week		Monday to Friday	Saturday	Sunday	Per week						

EMPLOYEES WHO WORKED NIGHT TURNS ONLY

					7	13	13	13	91	91					2	2
					7	12	12	12	84	84			1			1
					6	13		13	78	78		7				7
					7	12	12	6	78	78					1	1
					6	13	13	8	73	73	1					1
					6	12		12	72	72		1			1	2
					7	10	10	10	70	70					1	1
					6	10		18	68	68		6				6
					5	13			65	65		8				8
					6	10		12	62	62		3				3
					5	12			60	60		9	3	49		61
					6	10	10		60	60					1	1
					6	10		10	60	60	2	1			1	4
					5	11½			57½	57½	5					5
					5	10			50	50		3			1	4
					5				45	45		2				2
Total											8	40	4	57		109

EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER

7	10	10	10	70	7	14	14	14	98	84	6					6
7	12	12	12	84	7	12	12	12	84	84	6	2	2		6	16
7	11	13	12	80	6	13			77	78½		1				1
7	12	12	12	84	6	12		12	72	78	4					4
6	12	12		72	7	12	12		84	78	2					2
7	10	10	10	70	6	14		14	84	77	2					2
6	12	12		72	6	12	12		72	72			2			2
6	11	10		65	6	13		13	78	71½	6					6
6	10	10		60	6	13	13		78	69		2				2
6	10	10		60	6	13		13	78	69		2				2
6	11	11		66	6	12		12	72	69		2				2
6	12	12		72	5	12			60	66	10	7				17
6	11	9		64	5	13			65	64½	2					2
6	12	6		66	5	12			60	63					2	2
6	10½	10½	10½	63	6	10½	10½	10½	63	63		4				4
7	10	10	8	68	6	10		8	58	63		5				5
6	11	8½		63½	5	12			60	61½	4					4
6	11½	8½		66	5	11½			57½	61½	2					2
6	11	11		66	5	11			55	60½		2	7			9
5	12			60	5	12			60	60			16		29	45
6	10	10		60	6	10	10	8	60	60		4			11	15
6	9½	9		56½	7	9½	8	8	63½	60					2	2
6	11	9		64	5	11			55	59½					19	19
6	10	10		60	6	10	9		59	59½					1	1
6	11	8½		63½	5	11			55	59½	31					31
6	10	9		59	6	10	9		59	59					1	1
6	10	10		60	5	10			50	55		78				79
6	10	9		59	5	10			50	54½					1	1
6	10	8		58	5	10			50	54	395	6				401
6	10	6		56	5	10			50	53	202					202
6	10	5		55	5	10			50	52½		10				10
6	9½	8		55½	5	9½			47½	51½					2	2
6	9½	8		54½	5	9½			46½	50½					57	57
6	9	9		54	5	9			45	49½		281				281
6	9	8		53	5	9			45	49					1	1
6	9	7½		52½	5	9			45	48½		115				115
6	9	7¼		52¼	5	9			45	48½	82					82

TABLE E (4).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—PUDDLING MILLS—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Day turns					Night turns					Average hours per week	East-ern	Pitts-burgh	Great Lakes and Mid-dle West	South-ern	Total
Turns per week	Hours				Turns per week	Hours									
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week						

EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER

6	9	6¾	---	51¾	5	9	---	---	45	48%	107	---	---	---	107
6	8¾	8¾	---	52½	5	8¾	---	---	43¾	48½%	---	119	---	---	119
6	8½	8½	---	51	5	8½	---	---	42½	46¾	---	465	---	64	529
5	8¾	---	---	43¾	5	8¾	---	---	43¾	43¾	---	18	---	---	18
7	8	8	8	56	7	8	8	8	56	56	---	10	---	---	10
7	8	8	8	56	5	8	8	8	40	48	3	---	---	---	3
7	8	8	10	58	5	8	---	8	40	46	---	3	---	---	3
6	8	8	---	48	5	8	---	---	40	44	---	36	---	---	36
6	8	7½	---	47½	5	8	---	---	40	43¾	---	2	---	---	2
6	8	6	---	46	5	8	---	---	40	43	17	---	---	---	17
6	8	8	---	48	5	8	---	---	40	42½	---	---	64	---	64
5	8	---	---	40	5	8	---	---	40	40	---	---	---	47	47
5	8	---	---	40	5	8	---	---	40	40	---	---	77	---	77
Total.	---	---	---	---	---	---	---	---	---	---	881	1,174	168	244	2,467

Of the total number of puddling-mill employees reported, 1,080, or 32 per cent, worked 10 hours per day; 695, or 20 per cent, worked 9 hours per day; 410, or 12 per cent, worked 12 hours per day; and 385, or 11 per cent, worked 8 hours. Very little 7-day work was reported in this department, only 56, or 2 per cent of all employees, working 7 days per week all the time and 22, or 1 per cent, a part of the time. A few of the 8, 10, and 12 hour workers also worked 7 days per week, but none of those reported on a 9-hour basis worked that many turns. The basic figures are set forth by districts in the following table. A few minor groupings do not appear in this summary.

In preparing the summary only the regular hours per turn an employee worked on Monday to Friday are considered, regardless of the length of his turn on Saturday and Sunday.

SUMMARY OF PRINCIPAL GROUPS IN TABLE E (4)

Item	Number of employees who worked specified days and hours					Per cent of total
	Eastern district	Pittsburgh district	Great Lakes and Middle West district	Southern district	Total	
Total employees in puddling mills.....	1,045	1,313	515	555	3,428	100
Employees who worked:—						
7-day week all the time.....	13	19	3	21	56	2
7-day week part of the time.....	11	9		2	22	1
12 or more hours per day.....	44	49	221	96	410	12
7-day week and 12 or more hours per day all the time.....	12	3	3	11	29	1
7-day week and 12 or more hours per day part of the time.....	6	0			6	(¹)
10 hours per day.....	654	192	25	209	1,080	32
7-day week and 10 hours per day all the time.....	1	6		9	16	(¹)
7-day week and 10 hours per day part of the time.....	2	5			5	(¹)
8 hours per day.....	29	51	246	59	385	11
7-day week and 8 hours per day all the time.....		10			10	(¹)
7-day week and 8 hours per day part of the time.....	3	3			6	(¹)
9 hours per day.....	274	408		13	695	20

¹ Less than 1 per cent.

BLOOMING MILLS

Data for 1924 were collected from the pay rolls of 25 blooming mills and cover 5,649 employees in all occupations. Of the total number of employees reported, 1,987 are found in the principal productive occupations for which separate figures are given. Data were first obtained for this department in 1910 and comparative figures are presented for the years 1910 to 1924.¹

The year 1924 marks the lowest point of full-time hours per week in the blooming mills in the period 1910 to 1924. Up until the summer of 1923 this department, while showing a gradual decrease from former years in the hours of labor of employees as a whole, was still largely on a 12-hour basis and some employees also worked 7 days per week. A general reduction of the working time of employees, however, took place in the latter part of 1923, and a large number of the plants adopted the 8-hour day for all employees. Considering the principal productive occupations as a whole, the average of full-time hours per week in 1924 was 19 per cent less than in 1922 and 22 per cent less than in 1913.

The study also shows there was a large increase in earnings per hour in 1924 as compared with any other year for which data are presented except 1919 and 1920. Hourly earnings in 1919 were approximately the same as in the principal productive occupations combined in 1924, but earnings in 1920 were unusually high and the average for that year is 5 per cent greater than that for 1924. The 1924 hourly earnings, however, were 31 per cent above those in 1922 and 121 per cent above those in 1913; in other words, approximately $2\frac{1}{2}$ times the hourly earnings for 1913.

The increase in hourly earnings was more than enough to compensate for the reduction of hours, and weekly earnings in 1924 still show an increase as compared with all other years except 1919 and 1920.

The most significant facts concerning average earnings and average hours in each of the principal productive occupations in blooming mills are shown in Table A (5). While the customary working time of the 12 occupations combined is 19 per cent less in 1924 than in 1922, when considered separately decreases in the average full-time hours per week range from 8.1 hours per week for roll engineers to 16.3 hours for bottom makers' helpers.

Bottom makers' helpers customarily worked 70.3 hours per week in 1910 and continued to do so with only slight variations until 1913 when the average was increased to 72 hours. In 1914 full-time hours per week were reduced to 69.8, and, following slight increases in 1915 and 1917, were reduced to 68.8 in 1919 and to 64.6 in 1920. In 1922 the average was increased to 69.6 but in 1924 dropped to the new low average of 53.3 hours. Lesser but similar changes took place in the other occupations.

Average earnings per hour increased in each of the 12 principal productive occupations in 1924 as compared with 1922 and all other years except 1919 and 1920. The 1920 figures are higher in each

¹ No data were collected for the years 1916, 1918, 1921, and 1923.

occupation than those for 1924, and the averages for 1919 are greater in some occupations and lower in others. For example, the average of earnings per hour of laborers, which occupation comprises a large percentage of the employees in the principal productive occupations, was less than 20 cents per hour in 1910 to 1915, but in 1917 earnings were advanced to an average of 28.7 cents per hour. The increase was carried into 1919 and 1920, the averages for those years being 46.9 and 51.1, respectively. In 1922 the average dropped back to 35 cents per hour but was increased in 1924 to 46.2 cents. Table A (5) shows similar figures for the other occupations as well.

Average full-time earnings per week are below those for 1919 and 1920 for each occupation, but show increases over those for all other years.

The distribution of employees according to their full-time hours per week, contained in Table A (5), shows the extent to which full-time hours have been reduced in 1924 as compared with other years in this department. More than three-fourths of the employees in each occupation, except laborers, had a working week of less than 60 hours in 1924. Fifty-two per cent of the laborers were also on that basis.

Index numbers for full-time hours per week, earnings per hour, and full-time earnings per week are also contained in Table A (5). These are simply percentages computed from the averages presented in the table, using the average for 1913 as the base or 100 per cent. The index numbers for the department as a whole (all principal productive occupations combined) are shown on page 5.

TABLE A (5). — AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—BLOOMING MILLS

[For explanation of this table see p. 13]

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—					
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under 60	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84	
Pit cranemen:														
1910	18	99	69.6	\$0.315	\$21.41	100	85	84	18	11	51	4	16	
1911	18	95	68.8	.309	21.01	99	84	83	19	15	49	6	11	
1912	18	97	68.7	.328	22.33	99	89	88	19	19	46	6	10	
1913	19	115	69.3	.369	25.39	100	100	100	16	12	52	16	4	
1914	23	124	66.6	.357	23.29	96	97	92	5	3	11	44	3	
1915	23	119	66.7	.375	24.44	96	102	96	5	20	3	54	1	
1917	12	71	66.0	.546	35.02	95	148	138	21	9	5	56	14	
1919	19	138	67.2	.816	54.84	97	221	216	6	24	1	46	6	
1920	20	138	62.4	.871	54.07	90	236	213	12	36	6	33	14	
1922	24	156	68.6	.611	42.00	99	166	165	25	3	10	18	37	
1924	25	189	54.8	.803	43.89	79	218	173	22	55	5	12	3	
Heaters:														
1910	19	51	73.4	.521	37.88	103	88	90	6	2	4	61	8	
1911	19	49	73.3	.512	37.50	103	86	90	6	2	8	51	12	
1912	19	55	72.9	.552	40.14	102	93	96	5	2	7	60	7	
1913	19	79	71.2	.594	41.86	100	100	100	19	2	5	38	23	
1914	23	89	63.9	.542	37.03	97	91	83	24	2	1	46	16	
1915	23	84	69.9	.584	40.06	98	98	96	21	2	1	42	24	
1917	12	47	65.7	.756	49.85	92	127	119	19	13	1	55	9	
1919	18	94	68.7	1.191	81.82	96	201	195	11	15	1	49	15	
1920	20	106	64.8	1.271	81.92	91	214	196	7	29	1	33	23	
1922	24	115	68.9	.904	62.18	97	152	149	23	23	12	32	28	
1924	25	139	55.2	1.192	65.66	78	201	157	7	78	8	1	5	

TABLE A (5). — AVERAGE CUSTOMARY FULL - TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—BLOOMING MILLS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—				
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84
Heaters' helpers:													
1910	11	34	73.4	\$0.344	\$24.62	114	96	108	9	12	35	26	18
1911	11	34	73.5	.363	26.71	114	101	117	9	12	35	18	26
1912	11	50	67.9	.352	23.63	105	98	104	30	8	32	12	18
1913	10	52	64.6	.359	22.76	100	100	100	40	8	19	31	2
1914	10	43	64.0	.337	20.95	99	94	92	7	35	9	14	33
1915	10	39	62.1	.369	22.48	96	103	99	46	10	26	15	3
1917	3	15	59.2	.611	37.66	92	170	165	60	5	13	27	—
1919	13	62	64.1	.818	52.43	99	228	230	5	37	5	40	6
1920	14	77	60.3	.828	49.37	93	231	217	5	51	8	10	26
1922	17	90	65.6	.654	43.51	102	182	191	42	2	4	17	29
1924	17	108	55.2	.827	45.76	85	230	201	9	76	4	5	6
Bottom makers:													
1910	16	60	70.5	.335	23.26	98	91	88	10	3	80	—	7
1911	16	55	70.8	.331	23.24	98	90	88	11	5	67	9	7
1912	16	58	70.9	.347	24.44	99	95	93	10	5	69	9	7
1913	15	62	71.9	.367	26.32	100	100	100	10	6	48	26	10
1914	20	79	68.6	.370	24.68	95	101	94	4	19	5	39	28
1915	20	76	68.5	.389	25.77	95	106	98	4	20	3	38	33
1917	11	38	70.8	.497	34.59	98	135	131	16	—	53	26	5
1919	16	104	69.4	.833	57.81	97	227	220	8	10	2	63	14
1920	17	122	63.2	.890	56.50	88	243	215	16	25	16	25	20
1922	21	119	66.6	.602	40.22	93	164	153	7	24	2	11	29
1924	23	162	53.3	.769	40.99	74	210	156	28	55	3	10	3
Bottom makers' helpers:													
1910	12	47	70.3	.251	17.23	98	95	92	13	—	79	—	9
1911	12	46	70.3	.243	16.83	98	92	90	13	7	65	11	4
1912	13	50	70.6	.267	17.95	98	98	96	12	—	60	24	4
1913	13	65	72.0	.283	18.72	100	100	100	9	—	51	31	9
1914	17	70	69.8	.273	18.45	97	104	99	9	9	44	34	4
1915	17	76	70.5	.269	18.46	98	102	99	8	8	1	38	39
1917	9	44	71.3	.394	26.74	99	146	143	14	—	59	18	9
1919	13	112	68.8	.659	45.34	96	251	242	9	18	—	43	17
1920	14	135	64.6	.654	43.05	90	249	230	13	21	9	28	29
1922	21	188	69.6	.463	32.33	97	176	173	9	19	3	4	21
1924	20	231	53.3	.632	33.69	74	240	180	32	48	3	14	3
Roll engineers:													
1910	18	42	70.9	.392	27.12	104	83	88	7	7	10	45	17
1911	18	40	70.9	.385	26.66	104	82	86	8	8	13	38	20
1912	19	46	68.4	.437	28.79	100	93	93	13	13	9	24	33
1913	19	52	68.5	.471	30.96	100	100	100	12	12	8	37	29
1914	23	60	65.6	.447	28.30	96	95	91	20	10	3	43	17
1915	23	59	65.4	.471	29.81	95	100	96	20	10	3	2	46
1917	12	37	63.8	.678	41.20	93	144	133	32	8	—	38	22
1919	19	60	64.1	.971	62.24	94	206	201	18	23	3	37	12
1920	20	63	60.9	1.017	61.68	89	216	199	5	49	3	3	22
1922	23	78	63.3	.751	47.72	92	159	154	4	35	15	12	18
1924	23	76	55.2	.928	51.60	81	197	167	9	71	5	12	3
Rollers:													
1910	18	46	67.6	.605	40.00	102	86	89	13	7	11	63	7
1911	18	41	66.6	.585	38.49	101	83	86	7	15	15	59	5
1912	19	46	65.9	.632	40.53	100	90	90	13	13	13	52	9
1913	19	46	66.2	.701	44.98	100	100	100	13	13	13	48	13
1914	23	54	63.6	.684	42.44	96	98	94	17	17	4	6	57
1915	23	53	63.5	.697	43.26	96	99	96	17	17	4	4	58
1917	12	34	62.4	.912	55.64	94	130	124	35	9	—	44	12
1919	18	51	62.6	1.389	86.95	95	198	193	29	14	4	45	4
1920	20	65	57.9	1.473	84.73	87	210	188	38	17	5	3	28
1922	24	71	60.9	1.175	71.31	92	168	159	7	41	7	11	18
1924	25	90	52.1	1.400	72.99	79	200	162	26	57	8	8	2

TABLE A (5). — AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—BLOOMING MILLS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—					
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84	
														48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84
Manipulators:														
1910.....	12	52	68.4	\$0.365	\$24.21	105	85	90	12	6	13	56	6	8
1911.....	19	48	67.9	.350	23.26	104	81	87	6	13	17	50	10	4
1912.....	19	49	66.8	.388	24.92	102	90	93	12	12	12	49	10	4
1913.....	19	60	65.3	.431	26.86	100	100	100	10	20	13	42	15	---
1914.....	23	62	62.4	.394	23.95	96	91	89	19	19	3	5	53	---
1915.....	23	60	63.4	.420	25.81	97	97	96	15	20	3	3	58	---
1917.....	12	34	62.4	.639	37.75	96	148	141	35	9	---	44	12	---
1919.....	19	65	62.4	.935	58.34	96	217	217	26	18	---	3	43	6
1920.....	20	82	58.7	.926	53.80	90	215	200	32	16	6	2	39	5
1922.....	24	88	61.6	.692	42.58	94	161	159	7	39	5	9	33	8
1924.....	25	102	52.9	.842	44.57	81	195	166	23	53	14	9	3	---
Table men:														
1910.....	13	36	69.3	.271	18.03	102	86	86	8	8	11	56	6	11
1911.....	13	35	68.7	.254	17.05	101	80	81	---	17	---	17	49	11
1912.....	13	35	68.7	.285	19.00	101	90	91	---	17	---	17	49	11
1913.....	12	31	68.0	.316	20.95	100	100	100	---	19	---	13	55	13
1914.....	14	36	63.6	.314	19.36	94	99	92	17	17	6	3	58	---
1915.....	14	34	63.1	.327	19.94	93	103	95	18	18	6	3	56	---
1917.....	4	13	63.1	.414	25.51	93	131	122	---	46	---	36	15	---
1919.....	9	33	62.3	.663	41.30	92	210	197	24	21	---	6	42	6
1920.....	14	53	59.1	.687	40.31	87	217	192	34	13	6	4	36	8
1922.....	15	57	61.1	.605	31.56	90	160	151	7	39	5	7	21	---
1924.....	14	58	51.6	.509	34.31	76	209	164	24	69	---	3	2	---
Shearmen:														
1910.....	19	48	70.0	.303	20.85	104	82	86	6	6	8	58	13	8
1911.....	19	46	69.4	.306	20.96	103	83	87	7	7	13	61	9	4
1912.....	19	52	69.8	.319	21.93	104	86	91	6	6	12	65	8	4
1913.....	19	56	67.2	.370	24.23	100	100	100	16	5	11	50	18	---
1914.....	23	65	65.0	.345	21.84	97	93	90	14	14	3	8	62	---
1915.....	23	62	65.9	.362	23.09	98	98	95	10	15	3	6	66	---
1917.....	12	30	65.9	.523	33.41	98	141	138	20	10	---	57	13	---
1919.....	19	59	64.9	.816	52.96	97	221	219	24	10	---	3	53	7
1920.....	20	78	59.4	.813	48.27	88	220	199	31	21	3	5	38	3
1922.....	24	90	62.8	.699	37.89	93	162	156	13	23	4	14	29	16
1924.....	24	96	51.7	.777	40.23	77	210	166	36	48	10	3	2	---
Shearmen's helpers:														
1910.....	18	100	70.9	.218	15.15	102	82	83	3	9	8	56	10	14
1911.....	18	96	69.5	.217	14.90	100	81	82	3	9	15	58	13	2
1912.....	18	99	70.2	.230	15.93	101	86	88	---	9	14	65	10	2
1913.....	18	111	69.5	.267	18.17	100	100	100	5	8	9	56	22	---
1914.....	20	113	68.4	.256	17.23	98	96	95	3	11	5	2	80	---
1915.....	20	114	68.5	.258	17.35	99	97	95	3	11	5	2	78	2
1917.....	10	29	68.1	.412	27.60	98	154	152	10	10	---	66	14	---
1919.....	19	159	68.8	.610	41.97	99	228	231	8	10	---	7	65	6
1920.....	19	168	62.7	.619	38.95	90	232	214	16	18	2	7	48	8
1922.....	23	218	64.6	.459	29.76	93	172	164	2	26	4	20	30	18
1924.....	23	254	52.5	.590	30.57	76	221	168	43	37	10	8	2	---
Laborers:														
1910.....	19	449	74.1	.162	11.97	101	88	88	---	1	2	13	54	6
1911.....	19	363	73.7	.163	12.02	100	89	89	---	1	4	9	59	9
1912.....	19	396	73.8	.164	12.13	101	89	90	---	1	3	10	57	11
1913.....	19	352	78.4	.184	13.53	100	100	100	---	1	3	16	54	12
1914.....	22	267	71.7	.187	13.39	98	102	999	(1)	---	4	17	69	5
1915.....	22	290	72.3	.187	13.49	99	102	100	(1)	---	2	16	66	3
1917.....	11	388	74.3	.267	21.28	101	156	157	---	5	---	66	28	1
1919.....	19	440	70.0	.489	32.83	95	255	243	13	3	1	14	43	16
1920.....	18	439	71.1	.511	36.43	97	278	269	12	(1)	3	10	33	22
1922.....	23	682	70.7	.650	24.84	96	190	184	1	10	14	5	35	34
1924.....	24	742	57.4	.462	26.51	73	251	196	30	22	27	19	2	---

¹ Less than 1 per cent.

The customary working time per week of all employees covered in blooming mills in each of the 5 years, 1914, 1915, 1920, 1922, and 1924,² has been classified, and the number and per cent of employees coming under each classification are shown in Table B (5).

Practically all employees in the blooming mills worked either 6 days or 7 days per week, or some combination thereof. In previous years between 50 and 75 per cent of all employees reported worked on a 6-day per week basis, but in 1924 only 38 per cent worked that number of turns. This decrease in 6-day work is due in large measure to the elimination of the 12-hour day in many plants and the substitution of the shorter shifts of from 8 to 10 hours. A large number of employees who had worked 12 hours per day, 6 days per week, were changed to 8 hours per day and 7 days per week either one or two weeks in a three-week period. This has resulted in a large increase in the number of employees in 1924 who worked either 6 days, 6 days, and 7 days, or 6 days, 7 days, and 7 days per week in rotation.

TABLE B (5).—NUMBER AND PER CENT OF EMPLOYEES WHO CUSTOMARILY WORKED EACH SPECIFIED NUMBER OF DAYS PER WEEK, 1914 TO 1924, BY DISTRICT AND YEAR—BLOOMING MILLS

[For explanation of this table see p. 13]

District and year	Number of plants	Number of employees	Number of employees whose customary working days per week were—					Per cent of employees whose customary working days per week were—								
			5 and 6 alternately	6	6 and 7 alternately	6, 6, and 7 in rotation	6, 7, and 7 in rotation	7	5 and 6 alternately	6	6, 6, and 7 in rotation	6, 7, and 7 in rotation	7			
Eastern:																
1914.....	3	248	42	50	128	10	-----	-----	13	17	20	52	4	-----	7	
1915.....	3	239	52	38	118	11	-----	-----	20	22	16	49	5	-----	8	
1920.....	3	243	40	8	155	29	-----	-----	16	16	3	63	12	-----	6	
1922.....	5	630	1	41	346	156	-----	-----	86	(¹)	7	55	25	-----	14	
1924.....	5	603	-----	48	289	125	-----	29	112	-----	8	48	21	-----	19	
Pittsburgh:																
1914.....	10	1,216	-----	-----	870	129	69	3	136	-----	72	11	6	(¹)	11	
1915.....	10	1,364	-----	-----	966	193	69	3	133	-----	71	14	5	(¹)	10	
1920.....	8	1,750	1	9	1,154	397	21	-----	168	(¹)	1	66	23	1	10	
1922.....	8	1,716	3	184	883	287	78	9	272	(¹)	11	51	17	5	16	
1924.....	8	2,650	-----	309	1,133	28	643	61	476	-----	12	43	1	24	2	18
Great Lakes and Middle West:																
1914.....	7	744	-----	-----	652	28	6	7	51	-----	88	4	1	1	7	
1915.....	7	792	-----	-----	672	34	12	18	56	-----	85	4	2	2	7	
1920.....	6	1,266	-----	-----	811	81	27	19	328	-----	64	6	2	2	26	
1922.....	8	1,610	-----	-----	870	254	70	56	360	-----	54	16	4	3	22	
1924.....	9	1,959	-----	-----	630	37	419	467	406	-----	32	2	21	24	21	
Southern:																
1914.....	3	268	-----	-----	184	5	-----	-----	79	-----	69	2	-----	-----	29	
1915.....	3	264	-----	-----	174	5	-----	-----	85	-----	66	2	-----	-----	32	
1920.....	3	358	-----	-----	333	8	16	-----	31	-----	86	2	4	-----	8	
1922.....	3	455	-----	-----	354	43	-----	-----	58	-----	78	9	-----	-----	13	
1924.....	3	437	-----	-----	122	37	-----	108	170	-----	28	8	-----	25	39	
Total:																
1914.....	23	2,476	42	50	1,843	172	75	10	284	2	2	74	7	3	(¹)	11
1915.....	23	2,659	52	38	1,930	243	81	21	294	2	1	73	9	3	1	11
1920.....	20	3,652	41	17	2,453	515	64	19	543	1	(¹)	67	14	2	1	15
1922.....	24	4,411	4	225	2,453	740	148	65	776	(¹)	5	56	17	3	1	18
1924.....	25	5,649	-----	357	2,174	227	1,062	665	1,164	-----	6	38	4	19	12	21

¹ Less than 1 per cent.

² These 5 years are the only ones in which data were collected covering all principal productive and other occupations.

Table C (5) presents the most significant facts relative to earnings and hours of labor of employees in the principal productive occupations in the 25 blooming mills covered in 1924. The occupations have been arranged as nearly as possible in the order of production, and figures are shown for each district and all districts combined for each occupation.

Referring to the first occupation presented, pit cranemen, the 162 positions were kept filled by a total of 189 men in the pay period scheduled. As stated in the explanation of this table, on page 14, many of the employees worked only part time in this occupation, and 189 men were necessary to keep the 162 positions filled. However, it must not be assumed that these employees worked only as pit cranemen during the period. Many of them worked in other occupations, and the number of employees shown in the separate occupations in the following table can not be combined as the number of employees who worked in the principal productive occupations in this department.

The average customary full time of the 189 men working in the 162 positions was 6.3 turns per week, 8.6 hours per turn, and 54.8 hours per week. These averages are for all districts combined and do not show the extreme range of the figures for the several districts. The average full-time hours per week in the Pittsburgh district, for example, was only 48.9, while in the Eastern district the average was 67.5 hours.

In the distribution of the customary working time of the 189 employees, 141 or 75 per cent, worked 56 hours per week or less, while the remaining 48, or 25 per cent, ranged from over 56 to 84 hours.

The average hourly earnings of pit cranemen ranged from 68.2 cents in the Eastern district to 86.8 cents in the Southern district, with an average of 80.3 cents for all districts combined. Average earnings for the half month period reached the high point in the Southern district, \$94.93, and employees in the Eastern district worked more hours at this occupation than those in any of the other three districts, or an average of 135.7 hours. These averages are only for the occupation under consideration, and do not include earnings that employees may have made in other occupations during the same period.

The range for average full-time weekly earnings of pit cranemen was from \$40.88 in the Pittsburgh district to \$52.25 in the Southern district. The average for all districts was \$43.89.

TABLE C (5).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND AVERAGE ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND DISTRICT—BLOOMING MILLS

[See explanation on p. 3 of adjustment of time worked and earnings received]

Occupation and district	Number of plants	Positions			Employees working in scheduled pay period (16 days) at specified occupation											Average full-time earnings per week				
		Number	Average customary full-time of employees in the positions			Number	Number whose customary full-time hours per week were—								Average hours worked		Average earnings in pay period	Average earnings per hour		
			Turns per week	Hours per turn	Hours per week		Over 44 and under 48	48	Over 48 and under 56	56	Over 56 and under 60	60	Over 60 and under 72	72					Over 72 and under 84	84 and over
Pit cranemen:																				
Eastern	5	26	6.3	10.6	67.5	28				4		16		6	2	135.7	\$92.49	\$0.682	\$46.01	
Pittsburgh	8	54	6.1	8.0	48.9	67		31	36							92.5	77.31	.536	40.88	
Great Lakes and Middle West	9	65	6.4	8.4	53.2	73		10	41	6		9	7			108.5	88.58	.816	43.43	
Southern	3	17	6.9	8.7	60.2	21				17				1	3	109.4	94.93	.868	52.25	
Total	25	162	6.3	8.6	54.8	139		41	77	23	4	9	23	1	6	5	107.0	85.87	.803	43.89
Heaters:																				
Eastern	5	15	6.4	10.7	68.2	18					4		7		7		117.0	134.56	1.150	78.40
Pittsburgh	8	43	6.3	8.0	49.9	56	6	4	46								84.4	105.82	1.253	62.54
Great Lakes and Middle West	9	43	6.6	8.3	54.8	55			47	4			4				98.4	114.17	1.160	63.58
Southern	3	8	6.9	9.0	61.5	10				8				1	1		111.9	130.27	1.164	71.60
Total	25	109	6.5	8.6	55.2	139	6	4	93	12	4		11	1	7	1	96.2	114.61	1.192	65.66
Heaters' helpers:																				
Eastern	5	17	6.2	10.6	65.8	20			4			4	5		7		124.6	79.80	.641	42.15
Pittsburgh	4	21	6.2	8.0	49.7	34		10	24								69.6	56.64	.814	40.47
Great Lakes and Middle West	6	25	6.5	8.1	52.4	40			30		10						74.7	65.55	.878	45.99
Southern	2	9	7.0	8.0	56.0	14				14							81.6	91.93	1.127	63.12
Total	17	72	6.4	8.6	55.2	108		10	58	14	10	4	5		7		83.2	68.80	.827	45.76

BLOOMING MILLS

TABLE C (5).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND AVERAGE ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND DISTRICT—*BLOOMING MILLS*—Continued

Occupation and district	Number of plants	Positions			Employees working in scheduled pay period (16 days) at specified occupation											Average full-time earnings per week					
		Number	Average customary full-time of employees in the positions			Number	Number whose customary full-time hours per week were—								Average hours worked		Average earnings in pay period	Average earnings per hour			
			Turns per week	Hours per turn	Hours per week		Over 44 and under 48	48	Over 48 and under 56	56	Over 56 and under 60	60	Over 60 and under 72	72					Over 72 and under 84	84 and over	
Bottom makers:																					
Eastern.....	4	16	6.4	10.0	64.5	20									17		3	112.7	\$62.22	\$0.552	\$35.62
Pittsburgh.....	8	50	6.2	8.0	49.4	75		26	49									75.9	67.67	.892	44.05
Great Lakes and Middle West.....	8	34	6.4	8.3	52.7	47		14	28						5			85.1	62.72	.737	38.24
Southern.....	3	11	6.5	8.7	56.4	20		6	12								2	72.4	51.31	.709	39.99
Total.....	23	111	6.3	8.5	53.3	162		46	89						5	17		82.7	63.54	.769	40.99
Bottom makers' helpers:																					
Eastern.....	2	20	6.1	10.1	61.5	22												89.0	51.75	.581	35.75
Pittsburgh.....	7	50	6.0	8.0	48.3	82	12	40	30									65.5	46.20	.705	34.06
Great Lakes and Middle West.....	8	60	6.4	8.2	52.0	93		22	64						7			74.7	48.85	.654	33.99
Southern.....	3	16	6.7	9.5	63.3	24			12	6							6	92.4	41.60	.450	28.49
Total.....	20	146	6.3	8.5	53.3	231	12	62	106	6					7	32		75.3	47.56	.632	33.69
Roll engineers:																					
Eastern.....	4	10	6.1	10.0	60.7	10			2		2	2	4					141.4	130.70	.924	56.10
Pittsburgh.....	8	27	6.6	8.1	52.2	28	3		18	7								114.0	104.34	.916	47.79
Great Lakes and Middle West.....	8	24	6.5	8.7	56.0	27		4	11	3	2	2	5					117.6	107.03	.911	50.99
Southern.....	3	7	6.6	8.4	56.3	11			9								2	76.6	79.84	1.042	53.69
Total.....	23	68	6.5	8.6	55.2	76	3	4	40	10	4	4	9			2		113.4	105.22	.928	51.60
Rollers:																					
Eastern.....	5	12	6.0	9.9	59.2	15			2		3	5	5					108.8	143.35	1.318	78.00
Pittsburgh.....	8	27	6.0	8.0	48.3	34	6	8	20									85.8	120.02	1.398	67.54
Great Lakes and Middle West.....	9	26	6.3	8.3	52.2	33		6	20	3			2	2				93.8	131.97	1.407	73.46
Southern.....	3	6	6.3	8.7	54.7	8		3	3								2	99.8	154.82	1.551	84.82
Total.....	25	71	6.1	8.5	52.1	90	6	17	45	3	3	7	7	2				93.8	131.38	1.400	72.99

Manipulators:																			
Eastern	5	18	6.0	9.9	59.4	23			3		4	11	5			109.6	83.95	.766	45.50
Pittsburgh	8	27	6.0	8.0	48.3	37	7	8	22							78.9	68.85	.873	42.17
Great Lakes and Middle West	9	26	6.3	8.4	52.9	34		5	22			3	4			91.2	75.98	.833	44.06
Southern	3	6	6.3	8.7	54.7	8			3	3				2		98.4	99.42	1.010	55.25
Total	25	77	6.1	8.7	52.9	102	7	16	50		4	14	9	2		91.5	77.03	.842	44.57
Tablemen:																			
Eastern	3	8	5.9	9.8	58.4	9			3		4		2			127.0	61.68	.486	28.37
Pittsburgh	5	21	6.0	8.1	48.7	28		7	21							84.8	61.81	.729	35.50
Great Lakes and Middle West	3	10	6.0	8.1	48.5	12		5	7							86.8	59.38	.685	33.20
Southern	3	7	6.3	9.1	57.1	9			2	5				2		103.6	68.90	.666	38.02
Total	14	46	6.1	8.6	51.6	58			14	36		4		2	2	94.6	62.39	.659	34.31
Shearmen:																			
Eastern	5	12	5.9	10.0	59.0	16			3		2	8	3			100.8	73.54	.730	43.06
Pittsburgh	8	30	6.1	8.0	48.8	37	7	15	15							87.4	68.09	.780	38.04
Great Lakes and Middle West	8	28	6.3	8.1	51.1	36		11	23			2				92.5	73.47	.794	40.58
Southern	3	6	6.3	8.7	54.7	7			2	3				2		100.5	79.97	.795	43.51
Total	24	76	6.2	8.4	51.7	96	7	28	44		2	10	3	2		92.5	71.88	.777	40.23
Shearmen's helpers:																			
Eastern	5	38	6.0	9.7	59.8	44			4		4	16	20			107.6	63.28	.588	35.18
Pittsburgh	8	80	6.0	8.0	48.0	151	13	88	50							56.7	35.09	.619	29.69
Great Lakes and Middle West	7	32	6.3	8.4	52.7	42		5	27			10				87.5	50.19	.574	30.22
Southern	3	12	6.3	9.3	58.7	17			2	10				5		82.6	38.53	.466	27.38
Total	23	162	6.1	8.6	52.5	254	13	95	91		4	26	20	5		72.4	42.70	.590	30.57
Laborers:																			
Eastern	5	31	6.0	10.0	59.8	44			1			43				85.3	31.17	.389	23.26
Pittsburgh	8	200	6.3	9.0	57.4	493		174	94		1	106	118			54.5	25.41	.466	26.76
Great Lakes and Middle West	8	121	6.4	8.6	55.5	167		46	53		3	44	21			89.4	44.86	.502	27.86
Southern	3	27	6.1	10.3	63.1	38						14	7	3	14	89.5	29.90	.334	21.09
Total	24	379	6.3	9.1	57.4	742			220	148	4	14	200	142	14	66.0	30.07	.462	26.51

Table D (5) shows the number of employees and the average and classified earnings per hour of heaters and roll engineers in 1924, by districts and all districts combined. These two occupations are selected as representative of the spread or variation of hourly earnings within the occupations in this department.

The average of hourly earnings for heaters in the several districts was \$1.192, and for roll engineers, 92.8 cents. The range of earnings for heaters was much wider than that for rollers in each district.

TABLE D (5).—AVERAGE AND CLASSIFIED EARNINGS PER HOUR IN TWO SELECTED OCCUPATIONS, 1924, BY DISTRICT—*BLOOMING MILLS*

[For explanation of this table see p. 15]

Occupation and district	Number of employees	Average earnings per hour	Number of employees whose earnings per hour were—										
			40 and under 50 cts.	50 and under 60 cts.	60 and under 70 cts.	70 and under 80 cts.	80 and under 90 cts.	90 cts. and under \$1	\$1 and under \$1.25	\$1.25 and under \$1.50	\$1.50 and under \$1.75	\$1.75 and under \$2	\$2 and under \$2.25
HEATERS													
Eastern.....	18	\$1.150			2		2	2	7	1	4		
Pittsburgh.....	56	1.253			3	2		6	18	19	4	3	1
Great Lakes and Middle West.....	55	1.160	1	1	4		1	1	31	13	3		
Southern.....	10	1.164			2		2		3		1	2	
Total.....	139	1.192	1	1	11	2	5	9	59	33	12	5	1
ROLL ENGINEERS													
Eastern.....	10	.924			2			4	4				
Pittsburgh.....	28	.916				5	5	14	4				
Great Lakes and Middle West.....	27	.911		2	4	2	6	2	11				
Southern.....	11	1.042	1	2		1	1			1	5		
Total.....	76	.928	1	4	6	8	12	20	19	1	5		

The customary turns per week and hours per turn and per week, together with the average full-time hours per week of employees in blooming mills are shown in detail, by districts and all districts combined, for the year 1924, in Table E (5). The information was obtained from 25 plants and covers 5,649 employees in all occupations.

The table shows the customary number of day turns and night turns per week and the corresponding hours for each turn for each day of the week as well as the full-time hours per week. Employees are divided into three groups as follows: (a) Those who work days only, (b) those who work nights only, and (c) those who alternate or rotate weekly from one shift to another. The order of arrangement begins with the highest average full-time hours per week.

Gas or repair turns have been disregarded when employees customarily work such turns at less frequent intervals than once every three weeks on a 3-turn basis or once every four weeks on a 2-turn basis. In a few instances relief systems have also been omitted where the periods elapsing between reliefs were longer than three or four weeks.

In some instances in the table hours are reported for 7 days, yet the number of days worked is given as 6. This is owing to the fact that it is a 7-day occupation wherein each employee was relieved 1 day in 7, with no information available, however, as to which day;

therefore, the hours for all days have been shown and the relief has been indicated in the full-time hours per week.

In the main the table is believed to be clear, but some points may need explanation. The first line of the table shows that in the plants canvassed 1 man in the Great Lakes and Middle West district and 6 men in the Southern district were found on a day job requiring them to work 7 days per week and 12 hours per day—a total of 84 hours per week. The bracketed tenth and eleventh lines indicate that 2 men alternated from 7 days of 10 hours one week to 6 days of 10 hours the next week, making an average of 65 hours per week.

In the third section of the table the first line shows that 7 men in the Great Lakes and Middle West district alternated from 7 turns of 10 hours on day work to 7 turns of 14 hours on night work, averaging 84 hours per week. The fifth and sixth lines of this section show 6 men going from 7 day turns of 12 hours to 6 night turns of 12 hours, followed by 6 day turns of 12 hours and then 7 night turns of 12 hours, making an average of 78 hours of labor per week.

When there are three 8-hour turns, the second and third are tabulated as night turns.

TABLE E (5).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—*BLOOMING MILLS*

[For explanation of this table see p. 15]

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Day turns					Night turns					Average hours per week	East-ern	Pitts-burgh	Great Lakes and Mid-dle West	South-ern	Total
Turns per week	Hours				Turns per week	Hours									
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week						

EMPLOYEES WHO WORKED DAY TURNS ONLY

7	12	12	12	84						84			1	6	7
7	12	12	6	78						78				8	8
7	12	12	5	77						77	1				1
6	12	12		72						72				34	34
6	12	11		71						71	2				2
7	11	11	5	71						71	12				12
7	10	10	10	70						70	21	25	75	6	127
7	10	10	9	69						69		1			1
7	9½	9½	9½	66½						66½				1	1
7	10	10	10	70						65	2				2
6	10	10	10	60						60		25			25
6	10½	8½		60						60			20	2	22
6	10	10	10	60						60	16	53	159	1	229
6	10	10	10	60						60		1			1
6	10		8	58						58	1				1
6	9½	9½		57						57				16	16
6	10	5½		55½						55½	40				40
6	9	9		54						54		1		41	42
7	8	8	8	56						56		9	6		15
6	8	8		48						48		140	48		188
6	8	4		44						44		2	2		4
Total											95	257	311	115	778

TABLE E (5).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—BLOOMING MI LLS—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Day turns					Night turns					Average hours per week	East-ern	Pitts-burgh	Great Lakes and Mid-dle West	South-ern	Total
Turns per week	Hours				Turns per week	Hours									
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week						

EMPLOYEES WHO WORKED NIGHT TURNS ONLY

					7	12	12	12	84	84					5	5
					7	11	11	12	77	77						2
					6	12	12	12	72	72	1		2		1	2
					7	10	10	10	70	70	2				5	7
					6	10		5	65	65			1			1
					6	10	10	10	60	60					2	2
					6	10	10		60	60					1	1
					6	10		10	60	60	2					3
					7	8		8	56	56					5	13
					6	8		8	48	48					7	8
					6	8		8	48	48					1	3
					5	8		8	40	40						3
					6	8		8	48	48						3
					6	8		8	44	44	2					2
Total.											7	22	9	11		49

EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER

7	10	10	10	70	7	14	14	14	98	84			7		7
7	11	11	11	77	7	13	13	13	91	84				5	5
7	12	12	12	84	7	12	12	12	84	84	4		16	4	24
7	12	12	12	84	6	12		12	72	78	17			12	29
7	12	12	12	84	6	12		12	72	72					6
6	12	12		72	7	12	12	12	84	78				6	6
7	11	11	11	77	6	13		13	78	77½				4	4
7	12	8	12	80	6	12		12	72	76	17			4	17
7	12	12	12	84	6	12		12	72	72					12
6	12	12		72	6	12		12	72	72	12				6
6	11		11	66	6	13		13	78	72				6	6
6	12	12		72	6	12		12	72	72	1				1
7	10	10	10	70	7	10	10	10	70	70	40	91	27	66	224
7	10	10	8	68	7	10	10	8	68	68			2		2
6	10	10		60	7	10	10	10	70	70			2		2
6	11	11		66	6	11		11	66	66	5				5
6	10	10	10	60	7	10	10	10	70	70					2
7	10	10	10	70	6	10	10	10	60	60	2				2
7	10	10	10	70	6	10	10	10	60	60			25		25
7	10	10	10	70	6	10	10	10	60	65			2		76
7	10	10	10	70	6	10	10	10	60	65	74	2		17	17
6	10	10		60	7	10	10	10	70	65			16	13	34
6	10	10		60	6	11		11	66	63	5				2
6	10	10	10	70	6	10		10	60	60					2
6	10	10	5	65	6	10		10	60	62½	4				4
6	10	10		60	6	10		10	60	62½	8				8
6	10	10		60	6	10		10	60	61¼	25				25
6	10	10	5	65	6	10		10	60	60				8	8
6	10	10	10	60	6	10	10	10	60	60	148	129	44	62	321
6	10	10		60	6	10	10	10	60	60					62
6	10	10	10	60	6	10	10	10	60	60				6	6
7	8½	8½	8½	59½	7	8½	8½	8½	59½	59½					1
6	10	8		58	6	10		10	60	59	26				26
6	10	8½		55¾	6	10¾		10	60	57½	2				2
7	9	9	8	62	6	9	8		53	57½			2		2

TABLE E (5).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—BLOOMING MILLS—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Day turns					Night turns					Average hours per week	East-ern	Pitts-burgh	Great Lakes and Mid-dle West	South-ern	Total
Turns per week	Hours				Turns per week	Hours									
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week						

EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER—Continued

7	8½	8½	8½	59½	6	8½		8½	51	55¼				1	1
6	10	5¼		55¼	6	10¼			53¼	54¼	44				44
6	9	9		54	6	9		9	54	54				2	2
6	9	9		54	6	9		9	54	54			2		2
7	8	8	8	56	7	8	8	8	56	56	32	332	262	63	689
7	8	8	8	56	7	8	8	8	56	56		8	1		9
7	8	8	8	56	7	8	8	7	55	55½			4		4
6	8	8		48	7	8	8	8	56	54½			6		6
6	8	8		48	7	8	8	11	59	54½					6
7	8	8	8	56	7	8	8		48	54		10			10
7	8	8	8	56	7	8	8	10	58	54					10
6	8	8		48	7	8	8	8	58	54			3		3
6	8	8		48	7	8	8	8	56	54					3
6	8	8		48	7	8	8	9	57	53½			3	9	12
6	8	8		48	7	8	8	8	56	53½					12
7	8	8	8	56	6	8	8	8	48	53½	29	4			33
7	8	8	8	56	6	8	8	8	56	53½					33
7	8	8	8	56	6	8	8	8	48	53½					33
6	8	8		48	6	8	8	8	48	53½					33
7	8	8	8	56	7	8	8	8	56	53½			92		92
6	8	8		48	7	8	8	8	56	53½		34	242		276
6	8	8	8	48	7	8	8	8	56	53½				108	108
3	8	8	8	48	7	8	8	8	56	53½					108
7	8	8	8	56	7	8	8	8	55	53		7			7
6	8	8		48	6	8	8	8	48	53					7
6	8	8		48	7	8	8	7	55	53			116		116
6	8	8		48	7	8	8	8	56	53					116
7	8	8	8	56	6	8	8	12	60	52			22		22
7	8	8	8	56	6	8	8	8	48	52				1	1
7	8	8	8	56	6	8	8	8	48	52				2	2
6	8	8		48	7	8	8	8	56	52		1			1
7	8	8	8	56	6	8	8		48	51½					3
7	8	8	8	56	6	8	8	10	50	51½			3		3
7	8	8	8	56	6	8	8	8	48	50%			52		52
7	8	8	8	56	6	8	8	8	48	50%			56	16	72
6	8	8		48	7	8	8	8	56	50%			152	239	391
6	8	8		48	6	8	8	8	48	50%					391
6	8	8		48	7	8	8	8	56	50%			319		319
6	8	8		48	6	8	8	8	48	50%					319
6	8	8		48	7	8	8	7	55	50%			116		116
7	8	8	3	51	6	8	8	8	48	49				87	87
6	8	8		48	6	8	8	8	48	48					87
6	8	8		48	6	8	8	10	50	48%				12	12
6	8	10		50	6	8	8	8	48	48%				28	28
6	8	8		48	6	8	8	8	48	48			764	8	777
6	8	8		48	6	8	8	8	48	48				121	121
6	8	8		48	6	8	8	8	48	48				13	13
6	8	8		48	6	8	8	8	48	48				20	20
7	8	8	8	56	5	8	8	8	40	48			2		2
6	8	8		48	6	8	8	8	48	48			2		2
6	8	8	8	48	6	8	8	8	48	48	2	4		14	2
6	8	8	8	48	6	8	8	8	48	48			73		73

TABLE E (5).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—BLOOMING MILLS—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Day turns					Night turns					Average hours per week	Eastern	Pittsburgh	Great Lakes and Middle West	Southern	Total
Hours				Turns per week	Hours										
Monday to Friday	Saturday	Sunday	Per week		Monday to Friday	Saturday	Sunday	Per week							
Turns per week															
EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER—Continued															
6	8	8	48	5	8	10	40	46		3				3	
6	8	8	48	5	8	8	40	45½		2				2	
6	8	8	48	6	8	8	48	45½		304				304	
6	8	8	48	5	8		40	44		2				2	
Total										501	2,371	1,639	311	4,822	

Of the total number of blooming mill employees reported, 1,164, or 21 per cent, worked 7 days per week all the time and 1,997, or 35 per cent, worked a week of 7 turns at least once every three or four weeks. As to the hours of labor, 170, or 3 per cent of all employees, worked 12 hours per day, 1,334, or 24 per cent, worked 10 hours per day, and 4,041, or 72 per cent worked a day of 8 hours.

A large part of the 7-day work in this department was confined to the 8-hour workers, 2,461, or 78 per cent of the 3,161 employees who worked 7 days per week either all or part of the time, being on that basis. The basic figures are set forth by districts in the following table. A few minor groupings do not appear in this summary.

In preparing the summary only the regular hours per turn an employee worked on Monday to Friday are considered, regardless of the length of his time on Saturday and Sunday.

SUMMARY OF PRINCIPAL GROUPS IN TABLE E (5)

Item	Number of employees who worked specified days and hours					Per cent of total
	Eastern district	Pittsburgh district	Great Lakes and Middle West district	Southern district	Total	
Total employees in blooming mills.....	603	2,650	1,959	437	5,649	100
Employees who worked—						
7-day week all the time.....	112	476	406	170	1,164	21
7-day week part of the time.....	195	734	923	145	1,997	35
12 or more hours per day.....	55		24	91	170	3
7-day week and 12 or more hours per day all the time.....	5		24	28	57	1
7-day week and 12 or more hours per day part of the time.....	46			22	68	1
10 hours per day.....	464	329	443	93	1,334	24
7-day week and 10 hours per day all the time.....	63	117	104	77	361	6
7-day week and 10 hours per day part of the time.....	120	27	42	13	202	4
8 hours per day.....	67	2,293	1,490	191	4,041	72
7-day week and 8 hours per day all the time.....	32	357	278	63	730	13
7-day week and 8 hours per day part of the time.....	29	707	886	109	1,731	31

PLATE MILLS

This department includes both sheared-plate mills, in which the edges of the plates are not rolled and must be sheared off, and universal-plate mills, in which the edges of the plates are rolled, and therefore only the ends need to be cut. No difference exists between the two types of mills except in the actual rolling of the plates, and some of the plants reported operated both sheared-plate and universal mills. Figures are shown separately for members of the two rolling crews, but not for the other occupations.

Data for 1924 were collected from the pay rolls of 13 plants and cover 4,234 employees in all occupations. Of the 4,234 employees reported, 1,887 are found in the principal productive occupations for which separate figures are given. Data were first obtained for this department in 1910, and comparative figures are presented for the period 1910 to 1924.¹

The year 1924 marks the lowest point of full-time hours per week in the plate-mill department in the period 1910 to 1924. The bureau's report for 1922 shows that approximately 40 per cent of the employees covered in that year were on a 12-hour basis, and some employees also worked 7 days per week. A general reduction in the working time of the employees, however, took place in the latter part of 1923, and the 12-hour day and 7-day week in this department were practically eliminated. Considering the principal productive occupations as a whole, average full-time hours per week in 1924 were 13 per cent less than in 1922 and 18 per cent less than in 1913.

The study also shows a considerable increase in earnings per hour in 1924 as compared with 1922 and any other year for which data are presented, except 1919 and 1920. Hourly earnings in 1924 were 8 per cent less than in 1919 and 20 per cent less than in 1920. They were, however, 16 per cent above those in 1922 and 115 per cent above those in 1913, or approximately 2½ times the hourly earnings of 1913.

The increase in hourly earnings was not quite sufficient to compensate for the reduction of hours, and weekly earnings in 1924 were lower than at any other time since 1917.

The most significant facts concerning average earnings and average hours in each of the principal productive occupations of plate mills are shown in Table A (6). While the customary working time of the 16 occupations combined was 14 per cent less in 1924 than in 1922, when considered separately decreases in the average full-time hours per week ranged from 5.7 hours per week for heaters' helpers to 11.5 hours for screw men, sheared plate.

Screw men, sheared-plate mills, customarily worked 68.6 hours per week in 1910 and continued to do so with only slight variations until 1917, when the average was increased to 69.9 full-time hours. The increase continued to 71.3 hours in 1919. The average was reduced to 68.4 in 1920 and to 66.2 in 1922, and in 1924 dropped to the new

¹ No data were collected for the years 1916, 1918, 1921, and 1923.

low average of 54.7 hours. Lesser but similar changes took place in the other occupations.

Average earnings per hour increased in each of the 16 principal productive occupations in 1924 as compared with 1922 and all other years, except 1919 and 1920. The 1919 and 1920 figures are higher in each occupation than those in 1924. For example, the average of hourly earnings of laborers, which occupation comprises a large percentage of the employees in the principal productive occupations, was less than 20 cents per hour in 1910 to 1915, but in 1917 was advanced to 29.4 cents per hour. The increase was carried into 1919 and 1920, the averages for those years being 45 and 49.8 cents, respectively. In 1922 the average dropped back to 33.6 cents per hour, but was increased in 1924 to 43.2 cents. Table A (6) shows like figures for the other occupations as well.

Average full-time earnings per week were below those for 1919 and 1920 for each occupation, and the averages for 1924 are slightly less than those in 1922 for most of the occupations, but show substantial increases over the weekly earnings for all other years.

The distribution of employees according to their full-time hours per week contained in Table A (6) shows the extent to which full-time hours have been reduced in 1924, as compared with other years, in this department. In 1924 one-half or more of the employees in every occupation except heaters' helpers worked a week of 60 hours or less, and in 12 of the 16 occupations over 65 per cent were on that basis.

Index numbers for full-time hours per week, earnings per hour, and full-time earnings per week are also contained in Table A (6). These are simple percentages computed from the averages presented in the table, using the average for 1913 as the base or 100 per cent. The index numbers for the department as a whole (all principal productive occupations combined) are shown on page 5.

TABLE A (6).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—PLATE MILLS

[For explanation of this table see p. 13]

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—					
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84	
Charging-crane and charging-machine operators:														
1910.....	9	41	71.6	\$0.303	\$21.85	101	89	91	-----	-----	-----	-----	-----	10
1911.....	9	39	69.4	.283	19.70	98	83	82	-----	3	5	33	56	3
1912.....	10	42	69.6	.315	21.98	98	93	91	-----	5	33	33	29	-----
1913.....	10	46	70.7	.339	24.07	100	100	100	-----	-----	35	39	26	-----
1914.....	12	52	70.2	.306	21.69	99	90	90	-----	-----	42	31	27	-----
1915.....	12	54	70.3	.329	23.39	99	97	97	-----	-----	41	30	30	-----
1917.....	7	30	70.4	.480	33.85	100	142	141	-----	-----	20	80	-----	-----
1919.....	11	71	71.5	.799	57.13	101	236	237	-----	-----	18	76	6	-----
1920.....	10	63	70.0	.798	56.18	99	235	233	-----	6	38	19	37	-----
1922.....	12	72	66.9	.563	37.88	95	166	157	-----	19	17	32	3	29
1924.....	13	87	67.1	.679	37.79	81	200	157	-----	44	14	43	-----	-----

TABLE A (6).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—PLATE MILLS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—						
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	60	Over 60 and under 72	72	Over 72 and under 84	84
Heaters:															
1910.....	11	56	71.0	\$0.508	\$36.35	99	90	90				39	54		7
1911.....	11	55	69.1	.468	32.46	96	83	80		2	4	38	55		2
1912.....	11	55	69.9	.513	36.02	97	91	89			4	36	33		
1913.....	11	54	71.7	.562	40.59	100	100	100				39	26	37	
1914.....	13	64	70.5	.529	37.63	98	94	93				48	23	22	6
1915.....	13	61	70.6	.557	39.73	98	99	98				49	21	23	7
1917.....	7	30	70.4	.771	54.35	98	137	134				20	80		
1919.....	11	66	70.7	1.202	84.98	99	214	209				27	70	3	
1920.....	11	84	68.5	1.189	81.55	96	212	201			4	60	26	11	
1922.....	12	75	67.6	.852	57.03	94	152	141		5		55	15	25	
1924.....	13	90	56.5	.961	52.52	79	171	129			66		34		
Heaters' helpers:															
1910.....	10	111	69.5	.243	16.98	101	96	97				67	28		5
1911.....	10	108	67.3	.227	15.31	98	90	87				66	30		1
1912.....	10	113	68.7	.243	16.74	100	96	96			3	61	25	8	4
1913.....	10	107	68.7	.252	17.50	100	100	100				64	23	12	
1914.....	12	112	67.7	.247	16.68	99	98	95				76	9	15	
1915.....	12	109	67.6	.264	18.04	98	105	103				76	8	16	
1917.....	6	36	67.4	.469	31.67	98	186	181				56	44		
1919.....	10	129	71.1	.601	42.73	103	238	244				23	74	3	
1920.....	10	140	68.9	.620	42.74	100	246	244			1	73	17	9	
1922.....	11	132	67.3	.503	34.36	98	200	196			7	62	13	30	5
1924.....	12	126	61.6	.538	32.84	90	213	188		2	37	6	46		14
Roll engineers:															
1910.....	11	36	71.5	.300	21.45	98	97	95				28	61	11	
1911.....	11	35	70.8	.290	20.55	97	94	91				34	37	12	6
1912.....	11	37	72.5	.287	20.93	100	93	92			5	32	27	27	14
1913.....	11	36	72.8	.309	22.63	100	100	100				33	31	22	14
1914.....	13	38	70.2	.307	21.55	96	99	95				45	34	16	5
1915.....	13	39	69.7	.309	21.58	96	100	95				51	28	15	5
1917.....	7	20	70.9	.444	31.63	97	144	140				30	60		10
1919.....	11	43	72.7	.744	54.09	100	241	239				19	67		14
1920.....	11	39	71.6	.774	55.98	98	250	247				31	33	23	13
1922.....	12	46	69.6	.538	37.74	96	174	167				26	26	13	17
1924.....	12	46	63.3	.614	38.99	87	199	172			37	13	41		19
Rollers, sheared-plate mills:															
1910.....	9	28	68.4	.712	48.18	100	99	98				71	29		
1911.....	9	28	68.1	.607	41.46	99	85	84			4	54	43		
1912.....	9	27	68.7	.711	48.93	100	99	99				48	52		
1913.....	9	26	68.5	.718	49.21	100	100	100				50	50		
1914.....	11	28	68.0	.703	47.94	99	98	97				57	43		
1915.....	11	28	67.9	.734	49.89	99	102	101				57	43		
1917.....	7	18	69.4	1.011	70.32	101	141	143				33	67		
1919.....	9	30	70.8	1.530	108.32	103	213	220				23	77		
1920.....	10	35	68.1	1.558	106.60	99	217	217			6	51	34	9	
1922.....	10	33	66.5	1.126	74.34	97	157	151			21	6	39	15	18
1924.....	10	34	56.5	1.300	71.62	82	181	146			21	24	21	35	
Screw men, sheared-plate mills:															
1910.....	9	28	68.6	.421	28.75	99	87	86				64	36		
1911.....	9	28	68.6	.393	26.95	99	82	81			4	46	50		
1912.....	9	29	69.0	.435	30.00	100	90	90			3	41	55		
1913.....	9	29	69.0	.482	33.36	100	100	100				45	55		
1914.....	10	28	68.7	.434	30.08	100	90	90				50	50		
1915.....	10	26	68.3	.474	32.61	99	98	98				54	46		
1917.....	7	22	69.9	.702	49.15	101	146	147				27	73		
1919.....	9	52	71.3	1.117	79.64	103	232	239				16	84		
1920.....	9	59	68.4	1.115	76.23	99	231	229			5	51	44		
1922.....	8	29	66.2	.863	66.42	96	179	169				28	31	21	21
1924.....	8	33	54.7	1.052	66.78	79	218	170			33	15	18	33	

TABLE A (6).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—PLATE MILLS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—						
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84		
Table operators, sheared-plate mills:															
1910.....	9	26	68.4	\$0.318	\$21.64	100	88	87				69	31		
1911.....	9	28	68.1	.300	20.44	100	83	82				57	43		
1912.....	9	30	68.3	.334	22.85	100	92	92				53	47		
1913.....	9	31	68.2	.363	24.87	100	100	100				55	45		
1914.....	11	31	67.6	.317	21.73	99	87	87				61	39		
1915.....	11	32	67.5	.332	22.63	99	91	91				63	38		
1917.....	6	20	68.5	.510	35.02	100	140	141				40	60		
1919.....	9	45	70.6	.825	58.25	104	227	234				29	71		
1920.....	10	42	67.6	.870	58.80	99	240	236			5	55	40		
1922.....	10	36	65.6	.635	42.25	96	175	170		22	8	31	28	11	
1924.....	10	40	56.5	.730	39.48	83	201	159	28	20	25	28			
Hookmen, sheared-plate mills:															
1910.....	9	73	68.3	.262	17.88	100	84	83				68	32		
1911.....	9	72	68.1	.246	16.81	100	79	78				58	42		
1912.....	9	72	68.5	.276	18.90	100	88	88				53	47		
1913.....	9	76	68.4	.313	21.55	100	100	100				57	43		
1914.....	11	74	68.2	.394	20.27	100	94	94				57	43		
1915.....	11	76	68.0	.314	21.57	99	100	100				58	42		
1917.....	6	49	69.6	.476	33.25	102	152	154				29	71		
1919.....	9	89	71.0	.780	55.38	104	249	257				22	78		
1920.....	10	100	67.6	.813	55.02	99	260	255			8	55	37		
1922.....	10	80	65.8	.585	38.20	96	187	177		20	9	35	30	6	
1924.....	10	105	56.0	.644	35.05	82	206	163	30	13	27	30			
Roll hands, other, sheared-plate mills:															
1910.....	6	14	68.0	.263	17.71	98	99	97				71	29		
1911.....	6	14	68.9	.242	16.64	100	91	91				43	57		
1912.....	6	16	69.3	.269	18.54	100	102	101				38	63		
1913.....	7	20	69.1	.265	18.28	100	100	100				50	50		
1914.....	9	24	67.4	.257	17.42	98	97	95				67	33		
1915.....	9	24	67.4	.268	18.12	98	101	99				58	42		
1917.....	5	16	69.1	.401	27.74	100	151	152				37	63		
1919.....	8	28	71.0	.676	48.00	103	255	263				21	79		
1920.....	8	33	68.3	.668	45.76	99	252	250			6	64	30		
1922.....	10	56	65.5	.480	31.70	95	181	173		16	9	43	32		
1924.....	10	61	58.4	.555	31.08	85	209	170	15	15	36	34			
Rollers, universal mills:															
1910.....	4	8	69.5	.636	44.22	100	95	92				50	50		
1911.....	4	7	68.4	.584	40.31	98	87	84				29	57		
1912.....	4	6	67.8	.581	39.78	97	86	83			14	33	50		
1913.....	4	6	69.8	.672	47.81	100	100	100				33	67		
1914.....	5	8	68.8	.590	41.08	99	88	86				50	50		
1915.....	5	8	68.8	.676	47.10	99	101	99				50	50		
1919.....	5	9	70.7	1.371	96.93	101	204	203				22	78		
1920.....	4	9	70.0	1.372	98.32	100	204	206				56	22	22	
1922.....	5	11	64.8	1.187	75.26	93	177	157		18	18	36	27		
1924.....	6	13	56.4	1.251	70.34	81	186	147	15	23	31	31			
Screw men, main rolls, universal mills:															
1910.....	4	8	69.5	.470	32.75	99	102	100				50	50		
1911.....	4	7	66.6	.421	28.23	95	92	86				29	43		
1912.....	4	7	66.6	.407	27.38	95	88	84			29	29	43		
1913.....	4	7	70.1	.460	32.66	100	100	100				29	71		
1914.....	5	9	69.2	.386	26.96	99	84	83				44	56		
1915.....	5	9	69.2	.451	31.51	99	98	96				44	56		
1919.....	5	11	70.9	1.015	71.96	101	221	220				18	82		
1920.....	4	9	69.4	1.174	83.35	99	255	255				22	78		
1922.....	5	11	64.0	.813	50.80	91	177	156		18	27	36	18		
1924.....	6	15	56.0	.841	48.45	80	183	148	13	20	40	27			

TABLE A (6).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBER THEREFOR, 1910 TO 1924, BY OCCUPATION—PLATE MILLS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—						
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under 60	Over 48 and under 60	60 and under 72	Over 72 and under 84	84		
Screw men, side rolls, universal mills:															
1910	4	10	69.2	\$0.314	\$21.77	101	107	106			60	40			
1911	4	9	66.3	.296	19.80	97	101	96		22	44	33			
1912	4	9	66.3	.271	18.12	97	92	88		22	44	33			
1913	4	8	68.6	.294	20.56	100	100	100			50	50			
1914	5	10	68.1	.271	18.69	99	92	91			60	40			
1915	5	10	68.1	.332	22.83	99	113	111			60	40			
1919	5	10	70.8	.713	50.48	103	243	246			20	80			
1920	4	13	69.6	.738	57.38	101	251	279			46	54			
1922	5	12	65.3	.606	39.04	95	206	190		17	50	17			
1924	6	17	66.6	.642	37.31	83	218	181	12	18	29	41			
Roll hands, other, universal mills:															
1910	2	6	70.0	.299	20.93	100	115	113			33	67			
1911	2	4	72.0	.299	21.55	102	115	116				100			
1912	3	5	69.6	.277	19.41	99	106	105		20		80			
1913	3	8	70.3	.261	18.50	100	100	100			25	75			
1914	5	10	69.5	.266	18.48	99	102	100			40	60			
1915	5	9	69.2	.310	21.46	98	119	116			44	56			
1919	5	19	71.4	.605	43.20	102	232	234			11	89			
1920	4	10	69.5	.687	48.41	99	263	262			40	60			
1922	5	17	65.5	.502	32.18	93	192	174		12	24	24	41		
1924	6	19	66.7	.555	32.27	81	213	174	11	16	53	21			
Shearmen:															
1910	11	70	67.5	.378	25.69	98	91	89			3	64	33		
1911	11	66	68.0	.356	24.45	99	86	85			4	42	52		
1912	11	69	68.3	.384	26.48	99	93	92			7	38	55		
1913	11	69	68.8	.415	28.81	100	100	100		1		39	59		
1914	13	73	68.4	.406	27.97	99	98	97		1		45	53		
1915	13	73	68.2	.436	29.68	99	105	103		1	3	44	52		
1917	7	42	69.7	.638	44.74	101	154	155			24	10	67		
1919	11	97	70.8	.977	69.17	103	235	240		1		21	78		
1920	11	92	69.0	1.016	69.44	99	245	241			8	45	47		
1922	12	106	64.1	.666	43.10	93	160	150		27	10	29	33		
1924	13	108	65.8	.793	43.15	81	191	150	35	18	30	18			
Shearmen's helpers:															
1910	11	460	68.4	.215	14.71	100	86	85			2	57	42		
1911	11	429	68.4	.206	14.20	100	82	82			4	41	56		
1912	11	432	68.6	.223	15.42	100	89	89			3	39	58		
1913	11	425	68.7	.250	17.25	100	100	100		(1)		42	57		
1914	13	406	68.2	.243	16.71	99	97	97		(1)		48	52		
1915	13	406	68.4	.260	17.89	100	104	104		(1)		46	50		
1917	7	248	69.0	.400	27.60	100	160	160			20	10	70		
1919	11	630	71.1	.630	44.79	103	252	260			20	80	(1)		
1920	11	623	68.2	.665	45.56	99	266	264		(1)	3	44	52		
1922	12	678	64.9	.455	29.73	94	182	172		23	7	25	45		
1924	13	767	65.5	.529	28.85	81	212	167	34	20	32	15			
Laborers:															
1910	11	355	66.8	.159	10.68	96	88	85			25	58	10	1	6
1911	11	274	66.2	.158	10.51	96	87	83			28	52	18	3	1
1912	11	330	65.9	.161	11.17	99	89	89			22	36	31	6	5
1913	11	340	69.3	.181	12.62	100	100	100			22	36	32	3	7
1914	12	216	67.6	.174	11.85	98	96	94		6	21	30	27	13	3
1915	12	208	66.7	.174	11.66	96	96	92			17	19	29	19	3
1917	5	197	70.3	.294	20.67	101	162	164		3	10		87		
1919	10	587	69.5	.450	31.28	100	240	248			2	21	62	1	3
1920	8	348	67.9	.498	34.66	98	275	275			8	12	4	66	10
1922	10	493	64.0	.336	21.65	92	186	172			20	43	4	29	3
1924	11	640	66.8	.432	24.20	82	239	192	35	23	32	10			

¹ Less than 1 per cent.
² Including 3 per cent whose full-time hours per week were 91.

The customary working time per week of all employees covered in plate mills in each of the 5 years, 1914, 1915, 1920, 1922, and 1924,² has been classified, and the number and per cent of employees coming under each classification are shown in Table B (6).

Plate mills are operated almost entirely on a 6-day per week basis, and practically all 7-day work in this department is occasioned by light-up or repair turns, roll changes, etc. In previous years, between 88 and 96 per cent of all employees covered worked either 6 days per week regularly or 5 days and 6 days in alternate weeks. In 1924, however, only 78 per cent customarily worked those turns. This decrease has been absorbed by the slight increase in the number of employees who worked either 6 days and 7 days per week alternately, 6 days, 7 days, and 7 days per week in rotation, or 7 days per week regularly. This increase in 7-day work is due in large measure to the elimination of the 12-hour day in many plants and the substitution of the shorter shifts of from 8 to 10 hours.

TABLE B (6).—NUMBER AND PER CENT OF EMPLOYEES WHO CUSTOMARILY WORKED EACH SPECIFIED NUMBER OF DAYS PER WEEK, 1914 TO 1924, BY DISTRICT AND YEAR—PLATE MILLS

[For explanation of this table see p. 13]

District and year	Number of plants	Number of employees	Number of employees whose customary working days per week were—					Per cent of employees whose customary working days per week were—						
			5	5 and 6 alternately	6	6 and 7 alternately	6, 7, and 7 in rotation	7	5 and 6 alternately	6	6 and 7 alternately	6, 7, and 7 in rotation	7	
Eastern:														
1914.....	3	707	---	475	184	---	2	46	---	67	26	---	(1)	7
1915.....	3	699	3	516	131	---	2	47	(1)	74	19	---	(1)	7
1920.....	3	937	---	278	591	---	---	68	---	30	63	---	---	7
1922.....	4	1,218	---	344	680	44	---	150	---	28	56	---	---	12
1924.....	4	1,130	---	371	531	68	---	160	---	33	47	---	4	14
Pittsburgh:														
1914.....	6	1,139	---	172	817	71	---	79	---	15	72	7	---	7
1915.....	6	1,121	---	174	807	59	---	81	---	16	72	5	---	7
1920.....	5	1,572	---	128	1,397	18	---	29	---	8	89	1	---	2
1922.....	4	1,498	---	576	778	33	---	111	---	38	52	2	---	7
1924.....	5	2,118	---	---	1,625	149	97	247	---	77	7	5	---	12
Great Lakes and Middle West:														
1914.....	4	455	---	130	306	10	3	6	---	29	67	2	1	1
1915.....	4	425	---	106	294	18	3	4	---	25	69	4	1	1
1920.....	3	721	---	180	537	---	---	4	---	25	74	---	---	1
1922.....	4	1,050	1	148	799	18	---	84	(1)	14	76	---	2	8
1924.....	4	986	1	148	623	106	39	69	(1)	15	63	11	4	7
Total:														
1914.....	13	2,301	---	777	1,307	81	5	131	---	34	57	3	(1)	3
1915.....	13	2,245	3	796	1,232	77	5	132	(1)	35	55	3	(1)	9
1920.....	11	3,230	---	586	2,525	18	---	101	---	18	78	1	---	6
1922.....	12	3,766	1	1,068	2,257	95	---	345	(1)	28	60	3	---	9
1924.....	13	4,234	1	519	2,779	323	136	476	(1)	12	66	8	3	11

¹ Less than 1 per cent.

² These 5 years are the only ones in which data were collected covering all principal productive and other occupations.

Table C (6) presents the most significant facts relative to earnings and hours of labor of employees in the principal productive occupations in the 13 plate mills covered in 1924. The occupations have been arranged as nearly as possible in the order of production, and figures are shown for each district and all districts combined for each occupation.

Referring to the first occupation presented, charging-crane and charging-machine operators, the 71 positions were kept filled by a total of 87 men during the pay period scheduled. As stated in the explanation of this table, on page 14, several of the employees worked only part time in this occupation, and 87 men were necessary to keep the 71 positions filled. However, it must not be assumed that these employees worked only as charging-crane and charging-machine operators during the period. Many of them worked in other occupations, and the number of employees shown in the separate occupations in the following table can not be combined as the number of employees who worked in the principal productive occupations in this department.

The average customary full time of the 87 men working in the 71 positions was 6.1 turns per week, 9.3 hours per turn, and 57.1 hours per week. These averages are for all districts combined and do not show the extreme range of the figures for the several districts. The average full-time hours per week in the Pittsburgh district, for example, was only 53.9, while in the Eastern district, the average was 63.1 hours.

In the distribution of the customary working time of the 87 employees, 50, or 57 per cent, when working full time, worked 60 hours per week or less, while the remaining 37, or 43 per cent, worked over 60 and under 72 hours.

The average hourly earnings of charging-crane and charging-machine operators ranged from 48.7 cents in the Eastern district to 75.5 cents in the Pittsburgh district, with an average of 67.9 cents for all districts combined. Average earnings for the half-month period also reached the high point in the Pittsburgh district, \$78.60, and employees in that district also worked more hours at this occupation than those in either of the other two districts, or an average of 104.1 hours. In the Eastern district employees averaged only 77.9 hours at this occupation during the 16-day period, and received an average of \$37.90 for that time. These averages are only for the occupation under consideration and do not include earnings that employees may have made in other occupations during the same pay period.

The range for average full-time earnings per week of charging-crane and charging-machine operators was from \$30.72 in the Eastern district to \$42.48 in the Great Lakes and Middle West district. The average for all districts was \$37.79.

TABLE C (6).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND AVERAGE ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND DISTRICT—PLATE MILLS

[See explanation on p. 3 of adjustment of time worked and earnings received]

Occupation and district	Number of plants	Positions			Employees working in scheduled pay period (16 days) at specified occupation									Average full-time earnings per week			
		Number	Average customary full time of employees in the positions		Number	Number whose customary full-time hours per week were—					Average hours worked	Average earnings in pay period	Average earnings per hour				
			Turns per week	Hours per turn		Hours per week	48	Over 48 and under 56	Over 56 and under 60	60					Over 60 and under 72	Over 72 and under 84	
Charging-crane and charging-machine operators:																	
Eastern.....	4	20	6.0	10.6	63.1	29			2	7	20		77.9	\$37.90	\$0.487	\$30.72	
Pittsburgh.....	5	34	6.1	8.9	53.9	38		27			11		104.1	78.60	.755	40.71	
Great Lakes and Middle West.....	4	17	6.3	9.0	56.4	20		9		5	6		88.3	68.52	.753	42.48	
Total.....	13	71	6.1	9.3	57.1	87		36	2	12	37		91.7	62.26	.679	37.79	
Heaters:																	
Eastern.....	4	32	5.9	10.6	62.0	39		8	8		23		92.4	64.16	.694	43.06	
Pittsburgh.....	5	33	6.2	8.3	51.1	36		32	2		2		105.3	125.16	1.189	60.77	
Great Lakes and Middle West.....	4	15	6.4	8.8	56.5	15		9			6		124.0	125.70	1.014	57.30	
Total.....	13	80	6.1	9.3	56.5	90		49	10		31		102.8	98.82	.961	52.52	
Heaters' helpers:																	
Eastern.....	4	49	5.9	11.1	65.5	70	3		12		37	18	89.4	39.84	.445	29.17	
Pittsburgh.....	5	28	6.3	8.8	55.3	37		22	4		11		83.2	55.14	.663	36.67	
Great Lakes and Middle West.....	3	14	5.9	10.3	60.7	19			9		10		100.3	64.34	.641	38.92	
Total.....	12	91	6.0	10.3	61.6	126	3	22	25		58	18	89.2	48.03	.538	32.84	
Roll engineers:																	
Eastern.....	4	16	6.1	11.3	68.1	17				2	11	4	131.8	62.41	.474	32.25	
Pittsburgh.....	5	17	6.7	8.8	58.7	23		11	6		6		96.9	69.52	.717	42.11	
Great Lakes and Middle West.....	3	5	6.0	10.6	63.6	6				4	2		127.5	92.49	.726	46.14	
Total.....	12	38	6.3	10.1	63.3	46		11	6	6	19	4	113.8	69.89	.614	38.99	

Rollers, sheared-plate mills:																					
Eastern.....	4	12	5.8	10.7	62.4	13				7	6			100.3	90.87	.906		56.56			
Pittsburgh.....	4	11	6.0	9.1	54.6	12		6			6			106.8	164.15	1.537		83.89			
Great Lakes and Middle West.....	2	8	5.9	8.6	50.4	9		7		2				102.9	157.21	1.528		77.01			
Total.....	10	31	5.9	9.6	56.5	34		7	6	2	7	12		103.3	134.29	1.300		71.62			
Screw men, sheared-plate mills:																					
Eastern.....	2	6	5.9	10.5	61.4	8					6	2		84.1	58.56	.697		42.77			
Pittsburgh.....	4	11	6.0	9.1	54.3	15		3		3		9		85.2	96.59	1.134		61.55			
Great Lakes and Middle West.....	2	8	5.9	8.6	50.4	10		8			2			87.0	105.00	1.207		60.83			
Total.....	8	25	5.9	9.2	54.7	33		11	3	2	6	11		85.5	89.92	1.052		56.78			
Table operators, sheared-plate mills:																					
Eastern.....	4	12	5.8	10.8	62.4	16					10	6		80.7	39.60	.491		30.62			
Pittsburgh.....	4	11	6.0	9.1	54.3	11		3	3			5		114.6	99.76	.871		47.27			
Great Lakes and Middle West.....	2	10	5.8	9.0	51.8	13		8		5				87.1	78.62	.846		43.80			
Total.....	10	33	5.9	9.7	56.5	40		11	3	5	10	11		92.1	67.20	.730		39.48			
Hookmen, sheared-plate mills:																					
Eastern.....	4	30	5.7	10.9	62.2	44					18	26		79.1	34.88	.441		27.42			
Pittsburgh.....	4	22	6.0	9.0	53.8	31		8	7		10	6		82.1	60.13	.732		39.39			
Great Lakes and Middle West.....	2	24	5.9	8.6	50.4	30		23		7				86.5	71.63	.828		41.75			
Total.....	10	76	5.8	9.6	56.0	105		31	7	7	28	32		82.1	52.84	.644		35.05			
Roll hands, other, sheared-plate mills:																					
Eastern.....	4	17	5.7	11.1	63.2	32					15	17		56.4	23.89	.424		26.77			
Pittsburgh.....	4	13	6.0	9.1	54.7	22		4	5	2	7	4		68.3	42.42	.622		34.00			
Great Lakes and Middle West.....	2	5	5.8	9.0	51.8	7		5		2				78.6	63.13	.804		41.62			
Total.....	10	35	5.8	10.1	58.4	61		9	5	4	22	21		63.2	35.08	.555		31.08			
Rollers, universal mills:																					
Eastern.....	2	4	6.1	11.0	63.3	4						4		133.6	103.91	.778		49.22			
Pittsburgh.....	2	5	6.0	8.1	48.6	5		2	3					108.8	185.83	1.708		83.01			
Great Lakes and Middle West.....	2	3	6.0	10.0	60.0	4					4			106.8	134.52	1.260		75.61			
Total.....	6	12	6.0	9.5	56.4	13		2	3			4		115.8	144.84	1.251		70.34			
Screw men, main rolls, universal mills:																					
Eastern.....	2	4	6.1	10.8	62.8	4						4		133.9	78.34	.585		36.75			
Pittsburgh.....	2	5	6.0	8.0	48.2	5		2	3					108.0	111.85	1.036		49.92			
Great Lakes and Middle West.....	2	3	6.0	10.0	60.0	6					6			69.2	63.48	.917		55.03			
Total.....	6	12	6.0	9.4	56.0	15		2	3			6		99.4	83.57	.841		48.45			

TABLE C (6).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND AVERAGE ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND DISTRICT—PLATE MILLS—Continued

Occupation and district	Number of plants	Positions			Employees working in scheduled pay period (16 days) at specified occupation										Average full-time earnings per week			
		Number	Average customary full time of employees in the positions			Number	Number whose customary full-time hours per week were—					Average hours worked	Average earnings in pay period	Average earnings per hour				
			Turns per week	Hours per turn	Hours per week		48	Over 48 and under 56	Over 56 and under 60	60	Over 60 and under 72					Over 72 and under 84		
Screw men, side rolls, universal-plate mills:																		
Eastern	2	6	6.2	10.4	62.6	7					7		116.3	\$61.07	\$0.525	\$32.88		
Pittsburgh	2	5	6.0	8.0	48.2	5	2	3					108.0	84.07	.778	37.52		
Great Lakes and Middle West	2	2	6.0	10.0	60.0	5				5			53.7	38.72	.72	43.302		
Total	6	13	6.1	9.4	56.6	17	2	3		5	7		95.4	61.26	.642	37.31		
Roll hands, other, universal mills:																		
Eastern	2	4	6.1	11.0	63.3	4					4		132.0	63.66	.482	30.53		
Pittsburgh	2	5	6.0	8.0	48.2	5	2	3					105.8	63.29	.598	28.83		
Great Lakes and Middle West	2	5	6.0	10.0	60.0	10				10			67.7	39.11	.578	34.68		
Total	6	14	6.0	9.6	56.7	19	2	3		10	4		91.2	50.64	.555	32.27		
Shearmen:																		
Eastern	4	28	5.9	10.7	61.7	36			8	9	19		83.1	44.93	.541	33.37		
Pittsburgh	5	39	6.0	8.8	52.9	47	26		3	18			92.8	88.66	.955	50.52		
Great Lakes and Middle West	4	21	5.8	9.3	53.5	25	12		8	5			103.4	83.82	.811	43.37		
Total	13	88	5.9	9.5	55.8	108	38		19	32	19		92.0	72.96	.793	43.15		
Shearmen's helpers:																		
Eastern	4	152	5.9	10.5	61.3	221			48	59	114		72.4	28.91	.400	24.49		
Pittsburgh	5	222	6.0	8.8	53.0	304	150		29	125			79.5	47.23	.594	31.47		
Great Lakes and Middle West	4	188	5.8	9.2	53.7	242	110	3	70	59			93.0	51.19	.550	29.55		
Total	13	562	5.9	9.4	55.5	767	260	3	147	243	114		81.7	43.20	.529	28.85		
Laborers:																		
Eastern	4	70	6.0	9.6	57.8	205		92	49	49	15		39.9	13.90	.349	20.14		
Pittsburgh	5	134	6.2	8.9	55.2	327	224		9	46	48		48.5	22.92	.472	26.07		
Great Lakes and Middle West	2	43	6.0	10.0	60.0	108				108			56.0	24.48	.437	26.24		
Total	11	247	6.1	9.3	56.8	640	224	92	58	203	63		47.0	20.29	.432	24.20		

Table D (6) shows the number of employees and the average and classified earnings per hour of screw men, sheared-plate mills, and of shearmen, in 1924, by districts and all districts combined. These two occupations are selected as representative of the spread or variation in hourly earnings within the occupations in this department.

The average of hourly earnings for screw men, sheared-plate mills, was \$1.052, and for shearmen, 79.3 cents. The range of earnings for screw men, sheared-plate mills, was in many districts not so wide as that for shearmen.

TABLE D (6).—AVERAGE AND CLASSIFIED EARNINGS PER HOUR IN TWO SELECTED OCCUPATIONS, 1924, BY DISTRICT—PLATE MILLS

[For explanation of this table see p. 15]

Occupation and district	Number of employees	Average earnings per hour	Number of employees whose earnings per hour were—									
			35 and under 40 cts.	40 and under 45 cts.	45 and under 50 cts.	50 and under 60 cts.	60 and under 70 cts.	70 and under 80 cts.	80 and under 90 cts.	90 cts. and under \$1	\$1 and under \$1.15	\$1.15 and under \$1.30	$1.30 and under $1.50
SCREW MEN, SHEARED-PLATE MILLS												
Eastern.....	8	\$0.697				2	1	4	1			
Pittsburgh.....	15	1.134				1		2	2	3	1	5
Great Lakes and Middle West.....	10	1.207								2		5
Total.....	33	1.052				3	1	6	3	5	1	10
SHEARMEN												
Eastern.....	36	.541	2	6	8	9	7	4				
Pittsburgh.....	47	.955	1		1	1	6	7	9	4	8	3
Great Lakes and Middle West.....	25	.811				4	3	6	1		11	
Total.....	108	.793	3	6	9	14	16	17	10	4	19	3

The customary turns per week and hours per turn and per week, together with the average full-time hours per week, of employees in plate mills are shown in detail, by districts and all districts combined, for the year 1924 in Table E (6). The information was obtained from 13 plants and covered 4,234 employees in all occupations.

The table shows the customary number of day turns and night turns per week and the corresponding hours for each turn for each day of the week as well as the full-time hours per week. Three groups of employees are shown as follows: (a) Those who work days only, (b) those who work nights only, and (c) those who alternate or rotate weekly from one shift to another. The order of arrangement begins with the highest average full-time hours per week.

Gas or repair turns have been disregarded when employees customarily work such turns at less frequent intervals than once every three weeks on a 3-turn basis or once every four weeks on a 2-turn basis. In a few instances relief systems have also been omitted where the periods elapsing between reliefs were longer than three or four weeks.

In some instances in the table hours are reported for 7 days, yet the number of days worked is given as 6. This is owing to the fact

that it is a 7-day occupation wherein each employee was relieved 1 day in 7 with no information available, however, as to which day; therefore the hours for all days have been shown and the relief indicated in the full-time hours per week.

In the main the table is believed to be clear, but some points may need explanation. The first line of the table shows that in the plants canvassed 19 men in the Eastern district and 1 man in the Great Lakes and Middle West district were found on a day job requiring them to work 7 days per week and 12 hours per day—a total of 84 hours per week. The bracketed eighth and ninth lines indicate that 2 men in the Pittsburgh district alternated from 5 days of 13 hours, Monday to Friday, and 12 hours on Saturday, one week to 5 days of 10 hours, Monday to Friday, and 9 hours on Saturday, the next week, making an average of 68 hours per week.

In the third section of the table the first line shows that 28 men in the Eastern district alternated from 7 turns of 11 hours on day work to 7 turns of 13 hours on night work, averaging 84 hours per week. The fifteenth and sixteenth lines of this section show 6 men in the Eastern district going from 6 day turns of 11½ hours, Monday to Friday, and 6 hours on Saturday, to 5 night turns of 12½ hours each, followed by 6 day turns of 11½ hours, Monday to Friday, and 6 hours on Saturday, and then 6 night turns of 12½ hours each, making an average of 66½ hours of labor per week.

When there are three 8-hour turns, the second and third are tabulated as night turns.

TABLE E (6).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—PLATE MILLS

[For explanation of this table see p. 15]

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district				
Day turns					Night turns					Average hours per week.	East-ern	Pitts-burgh	Great Lakes and Mid-dle West	Total
Turns per week	Hours				Turns per week	Hours								
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week					

EMPLOYEES WHO WORKED DAY TURNS ONLY

7	12	12	12	84						84	19		1	20
7	11	11	12	78						78			1	1
7	11	11	11	77						77	3			3
6	12	12		72						72	2			2
7	10½	9½	9½	71½						71½		3		3
7	10½	10	10	70						70	33	16	3	52
7	10	9	10	69						69		15		15
6	13	12		77								2		2
6	10	9		59						68				2
6	12	6		66						66	3			3
7	10	10	6	66						66			1	1
6	11	10		65						65	1			1
7	10	10	5	65						65	1	1		2
6	11½	7		64½						64½	4			4
6	11½	6		63½						63½	3			3
6	11	6		61						61	23			23
6	10	10	10	60						60			34	34
6	10	10		60						60	35	18	43	96

TABLE E (6).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—PLATE MILLS—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district				
Day turns					Night turns					Average hours per week	East-ern	Pitts-burgh	Great Lakes and Middle West	Total
Turns per week	Hours				Turns per week	Hours								
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week					
EMPLOYEES WHO WORKED DAY TURNS ONLY—Continued														
6	10	9	-----	59	-----	-----	-----	-----	-----	59	10	70	-----	80
6	10	6	-----	56	-----	-----	-----	-----	-----	56	3	-----	-----	3
6	10	5	-----	55	-----	-----	-----	-----	-----	55	27	-----	-----	27
7	8	8	8	56	-----	-----	-----	-----	-----	56	-----	4	-----	4
6	8	10	-----	50	-----	-----	-----	-----	-----	50	-----	1	-----	1
6	8	8	-----	48	-----	-----	-----	-----	-----	48	-----	44	-----	50
Total.	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	168	174	88	430
EMPLOYEES WHO WORKED NIGHT TURNS ONLY														
-----	-----	-----	-----	-----	7	12	12	12	84	84	1	-----	-----	1
-----	-----	-----	-----	-----	7	10	10	10	70	70	-----	1	-----	1
-----	-----	-----	-----	-----	5	12½	-----	-----	62½	62½	-----	-----	1	1
-----	-----	-----	-----	-----	6	10	-----	10	60	60	-----	1	3	4
-----	-----	-----	-----	-----	7	8	8	8	56	56	-----	2	-----	2
-----	-----	-----	-----	-----	7	8	8	8	56	56	-----	-----	-----	-----
Total.	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1	4	4	9
EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER														
7	11	11	11	77	7	13	13	13	91	84	28	-----	-----	28
7	12	12	12	84	7	12	12	12	84	84	43	-----	5	48
7	12	12	12	84	6	5	-----	12	72	78	30	-----	17	47
7	12	12	12	84	6	12	-----	-----	60	72	2	-----	-----	2
6	6	-----	-----	72	6	12	-----	12	72	72	2	-----	5	7
6	12	11	-----	71	6	12	-----	-----	72	72	2	-----	-----	2
6	11½	6	-----	63½	6	12½	-----	15	77½	70½	9	-----	-----	9
7	10½	10½	10	75	5	13½	-----	-----	67½	70½	8	-----	11	11
6	11½	8	-----	65½	6	12½	-----	12½	75	70¼	-----	-----	-----	8
7	10	10	10	70	6	10	10	10	70	70	32	28	31	91
6	11½	6	-----	63½	6	12½	-----	12½	75	69¼	5	-----	-----	5
7	10	10	10	70	7	10	-----	-----	60	69	3	-----	-----	3
7	11	11	6	72	5	13	8	10	68	69	-----	9	-----	9
6	11½	6	-----	63½	5	12½	-----	-----	65	68½	-----	-----	4	4
6	11½	6	-----	63½	6	12½	-----	12½	75	66½	6	-----	-----	6
7	10	10	12	72	6	10	-----	10	60	66	-----	-----	-----	4
6	11	11	-----	66	6	11	-----	-----	66	66	-----	2	-----	2
7	10	10	5	65	6	11	-----	11	66	65½	-----	-----	2	2
6	11	10	-----	65	6	11	-----	11	66	65½	-----	-----	-----	14
7	10	8	12	70	6	10	-----	10	60	65	14	-----	-----	3
7	10	10	10	70	6	10	-----	10	60	65	3	-----	-----	-----
7	10	10	10	60	6	10	10	10	70	65	-----	18	10	28
6	10	10	10	60	7	10	10	10	70	65	-----	59	-----	59
6	10	10	10	60	6	10	10	10	60	65	-----	2	3	5
6	11½	8	-----	65½	5	12½	-----	-----	70	64	-----	-----	-----	2
7	10	8	10	68	5	10	-----	10	60	64	2	-----	-----	21
7	10	10	10	70	6	10	10	10	70	64	21	-----	-----	21
6	10	10	10	60	6	10	-----	10	60	64	-----	-----	-----	-----
6	10	10	10	60	6	10	-----	10	60	63½	-----	22	-----	22
6	12	6	-----	66	6	10	-----	10	60	63	-----	-----	-----	-----
6	11½	6	-----	63½	5	12½	-----	-----	62½	63	139	-----	-----	139
6	11½	5	-----	64	5	12½	-----	-----	62½	63	227	-----	-----	227
6	10	14	-----	64	5	12½	-----	-----	62½	62½	2	-----	-----	2
6	10	8	-----	64	6	10	-----	10	60	62	-----	8	-----	8
6	10	8	-----	64	6	10	-----	10	60	62	-----	-----	-----	14
7	10	13	-----	68	6	10	-----	10	60	61½	14	15	-----	15

TABLE E (6).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—PLATE MILLS—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turn and hours, by district				
Day turns					Night turns					Average hours per week	Eastern	Pittsburgh	Great Lakes and Middle West	Total
Turns per week	Hours				Turns per week	Hours								
	Monday to Friday	Saturday	Sunday	Per week		Monday to Friday	Saturday	Sunday	Per week					

EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER—Continued

7	10	10	5	65	5	11			55	60			3	3
6	10	10	10	60	6	10	10	10	60	60			5	5
6	10	10		60	6	10	10	10	60	60			20	20
6	10	10		60	6	10	10		60	60			215	215
6	10	10		60	6	10		10	60	60	171	406	42	619
6	10	9		59	6	10		10	60	59½		2		2
6	10	8		58	6	10		10	60	59	187			187
6	10	11½		61½	5	11			55	58½			12	12
6	10	5		55	5	12			60	57½	1			1
6	10	10		60	5	11			55	57½			136	136
7	8	8	8	56	7	8	16	10	66	62		8		8
					7	8	16	8	64					
6	8	8		48	7	8	16	10	66	59½		10		10
					7	8	16	8	64					
6	8	16		56	7	8	16	9	65	59		13		13
					7	8	16	8	64					
6	8	8		48	7	8	16	8	64	58½		3		3
					7	8	16	8	64					
7	8	8	8	56	7	8	10	8	58	56½		9		9
					7	8	8	8	56					
7	8	8	8	56	7	8	8	8	56	56		141	27	168
					7	8	8	8	56			10		10
6	8	8		48	7	8	10	8	58	54½		2		2
					7	8	10	8	58					
6	8	8		48	7	8	8	10	58	54		8		8
					7	8	8	8	56					
6	8	8		48	7	8	8	9	57	53½		23		23
					7	8	8	8	56					
7	8	8	8	56	6	8	8	8	48	53½			39	39
					6	8	8	8	48					
7	8	8	8	56	6	8	8	8	48	53½		13		13
					6	8	8	8	48					
6	8	8		48	6	8	8	8	56	53½		25		25
					6	8	8	8	48					
7	8	8	8	56	6	8	8	8	48	52		5		5
					6	8	8	8	48					
7	8	8	8	56	6	8	8	8	48	50½		15		15
					6	8	8	8	48					
6	8	8		48	6	8	8	8	48	50½			74	74
					6	8	8	8	48					
6	8	8		48	7	8	8	8	56	50½		16		16
					6	8	8	8	48					
7	8	8	7	55	6	8	8	8	48	50½		2		2
					6	8	8	8	48					
6	8	8		48	6	8	8	9	55	50½		3		3
					6	8	8	8	48					
6	8	8		48	6	8	8	8	53	49½		3		3
					6	8	8	8	48					
6	8	8		48	6	8	8	11	51	49		3		3
					6	8	8	8	48					
6	8	10	8	50	6	8	8	8	48	48½		3	5	8
					6	8	8	8	48					
6	8	8		48	6	8	10	8	50	48½		21		21
					6	8	8	8	48					
6	8	8		48	6	8	8	9	49	48½		28		28
					6	8	8	8	48					
6	8	8		48	6	8	8	8	48	48			225	225
					6	8	8	8	48					
6	8	8		48	6	8	8	8	48	48	10	913	3	926
					6	8	8	8	48			88		88
6	8	8		48	6	8	8	8	48	48				
					6	8	8	8	48					
Total											961	1,940	894	3,795

Of the total number of plate-mill employees reported, 476, or 11 per cent, worked 7 days per week all the time, and 482, or 11 per cent, worked a week of 7 turns at least once every 3 or 4 weeks. As to the hours of labor, 577, or 14 per cent of all employees, worked 12 hours per day; 1,795, or 42 per cent, worked 10 hours per day; and 1,805, or 43 per cent, worked a day of 8 hours. The 7-day work was quite evenly distributed among the different lengths of turns per day. The basic figures are set forth by districts in the following table. A few minor groupings do not appear in this summary.

In preparing the summary, only the regular hours per turn an employee worked on Monday to Friday are considered, regardless of the length of his turn on Saturday and Sunday.

SUMMARY OF PRINCIPAL GROUPS IN TABLE E (6)

Item	Number of employees who worked specified days and hours					Per cent of total
	Eastern district	Pittsburgh district	Great Lakes and Middle West district	Southern district	Total	
Total employees in plate mills.....	1,130	2,118	986	-----	4,234	100
Employees who worked—						
7-day week all the time.....	160	247	69	-----	476	11
7-day week part of the time.....	73	246	163	-----	482	11
12 or more hours per day.....	533	-----	44	-----	577	14
7-day week and 12 or more hours per day all the time.....	91	-----	6	-----	97	2
7-day week and 12 or more hours per day part of the time.....	35	-----	17	-----	52	1
10 hours per day.....	537	695	563	-----	1,795	42
7-day week and 10 hours per day all the time.....	66	70	35	-----	171	4
7-day week and 10 hours per day part of the time.....	38	105	18	-----	161	4
8 hours per day.....	11	1,416	378	-----	1,805	43
7-day week and 8 hours per day all the time.....	-----	174	27	-----	201	5
7-day week and 8 hours per day part of the time.....	-----	141	113	-----	254	6

STANDARD RAIL MILLS

As stated in the introduction and summary, data for this department are presented for 1924 only. Only 3 mills which have been scheduled in former years were found in operation and producing rails the major part of the time. The other 4 rail mills covered this year were new and in some instances were located in sections of the country not heretofore included in this department; hence, any comparison made between 1924 figures and those for other years might be more or less misleading. For this reason the bureau decided to make no comparison as between the old and the new figures, and data for this department are shown for 1924 only.

Data for this survey were collected from the pay rolls of 7 rail mills and cover 3,382 employees in all occupations. Of the 3,382 employees reported, 1,816 are found in the principal productive occupations for which separate figures are given.

Considering the principal productive occupations as a whole, the average of full-time hours per week of employees was 56.9, the average of earnings per hour was 63.3 cents, and the average of full-time weekly earnings was \$36.10. The average of hourly earnings of employees in all occupations was 57.3 cents.

The most significant facts concerning average earnings and average hours in each of the principal productive occupations of rail mills are shown in Table A (7). While the customary working time of the twenty-one occupations combined was 56.9 hours per week, when considered separately the average full-time hours per week ranged from 53.7 hours for straighteners, gag press, to 63.6 hours for laborers. Straighteners work almost entirely on an 8-hour basis, while laborers are usually employed 10 to 12 hours per day.

Average hourly earnings show an extremely wide range in the several occupations due to the variation in the amount of skill required. Laborers received an average of 38.5 cents per hour, which is next to the lowest average for laborers in any department. The average for laborers in puddling mills was the lowest.

The range of full-time earnings per week was from \$24.51 for laborers, to \$99.49 for rollers.

The distribution of employees according to their full-time hours per week contained in Table A (7) shows that a large percentage of employees in each occupation customarily worked 60 hours per week or less. In only 7 of the 21 occupations were any employees reported as working over 72 hours per week full time, and work in only one occupation, reheaters, is shown for an 84-hour week.

TABLE A (7).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, 1924, BY OCCUPATION—STANDARD RAIL MILLS

[For explanation of this table see p. 13]

Occupation	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Per cent of employees whose average full-time hours per week were—					
						48 and under 60	Over 48 and under 60	60	Over 60 and under 72	Over 72 and under 84	84
Charging-machine operators.....	3	23	54.8	\$0.595	\$32.61	61	---	---	39	---	---
Reheaters.....	3	10	59.0	.897	52.95	50	30	---	---	---	20
Reheaters' helpers.....	2	8	54.8	.521	28.56	75	---	---	25	---	---
Roll engineers.....	6	24	57.0	.747	42.57	25	---	---	46	---	---
Rollers.....	5	12	55.8	1.783	99.49	---	67	---	33	---	---
Rollers' helpers.....	6	18	56.5	.982	55.49	---	67	11	22	---	---
Table lever men.....	7	83	54.8	.750	41.09	---	73	---	27	---	---
Tablemen.....	4	30	59.6	.650	38.76	---	47	---	53	---	---
Guide setters.....	7	37	57.1	.810	46.27	---	54	24	22	---	---
Hot-saw men.....	7	27	55.7	.636	35.45	15	41	26	19	---	---
Hot-saw men's helpers.....	6	88	55.9	.511	28.54	13	45	15	27	---	---
Hotbed lever men.....	7	64	54.3	.595	32.28	13	52	16	20	---	---
Hotbed men.....	6	64	54.2	.467	25.33	9	64	19	8	---	---
Straighteners, gag press.....	7	158	53.7	1.142	61.33	23	56	16	6	---	---
Straighteners' helpers.....	7	300	56.9	.556	31.65	21	38	9	4	28	---
Chippers.....	7	193	54.9	.689	37.82	20	48	21	11	---	---
Drillers and punchers.....	7	347	57.5	.595	34.21	20	41	18	8	13	---
Cold-saw men.....	7	24	55.5	.497	27.69	50	---	33	---	17	---
Cold-saw men's helpers.....	6	141	55.7	.443	24.69	45	---	43	4	8	---
Inspectors.....	7	95	57.9	.530	30.71	33	14	31	13	11	---
Laborers.....	7	404	63.6	.385	24.51	24	4	40	9	23	---

The customary working time per week of the 3,382 employees covered in rail mills in 1924 has been classified and the number and per cent of employees coming under each classification are shown in Table B (7).

Rail mills are usually in operation either 6 days and 6 nights or 6 days and 7 nights per week. They are seldom continuously in operation.

A study of the following table shows that 1,496, or 44 per cent of all employees, worked 6 days per week, 1,552, or 46 per cent, worked some combination of 6 days and 7 days, and 334, or 10 per cent, worked 7 days regularly. The 7-day work was occasioned almost entirely by light-up or repair turns, roll changes, etc.

TABLE B (7).—NUMBER AND PER CENT OF EMPLOYEES WHO CUSTOMARILY WORKED EACH SPECIFIED NUMBER OF DAYS PER WEEK, 1924—STANDARD RAIL MILLS

Year	Number of employees	Number of employees whose customary working days per week were—					Per cent of employees whose customary working days per week were—				
		6	6 and 7 alternately	6, 6, and 7 in rotation	6, 7, and 7 in rotation	7	6	6 and 7 alternately	6, 6, and 7 in rotation	6, 7, and 7 in rotation	7
1924.....	3,382	1,496	569	2	981	334	44	17	(1)	29	10

¹ Less than 1 per cent.

Table C (7) presents the most significant facts relative to earnings and hours of labor of employees in the principal productive occupations in the 7 rail mills covered in 1924. The heating, rolling, and finishing of the rails are included, and the occupations have been arranged as nearly as possible in the order of production. Figures are not shown by separate districts, but all districts have been combined for each occupation.

Referring to the first occupation presented, charging-machine operators, the 15 positions were kept filled by a total of 23 men during the pay period scheduled. As stated in the explanation of this table, on page 14, many of the employees worked only part time in this occupation, and 23 men were necessary to keep the 15 positions filled. However, it must not be assumed that these employees worked only as charging-machine operators during the period. Some of them worked in other occupations, and the number of employees shown in the separate occupations in the following table can not be combined as the number of employees who worked in the principal productive occupations in this department.

The average customary full time of the 23 men working in the 15 positions was 6.2 turns per week, 8.8 hours per turn, and 54.8 hours per week.

In the distribution of the customary working time of the 23 employees, 14, or 61 per cent, worked 48 hours per week, while the remaining 9, or 39 per cent, worked over 60 and under 72 hours.

The average time worked as charging-machine operators during the half month period was 82.3 hours, for which the men received an average of \$48.95. This resulted in average earnings of 59.5 cents per hour and average full-time earnings of \$32.61 per week. These averages are only for the occupation under consideration and do not include the hours or earnings of employees in other occupations during the same pay period.

TABLE C (7).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND AVERAGE ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION—STANDARD RAIL MILLS

[See explanation on p. 3 of adjustment of time worked and earnings received]

Occupation	Number of plants	Positions			Employees working in scheduled pay period (16 days) at specified occupation										Average full-time earnings per week			
		Number	Average customary full-time hours worked in the positions			Number	Number whose customary full-time hours per week were—						Average hours worked	Average earnings in pay period		Average earnings per hour		
			Turns per week	Hours per turn	Hours per week		48	Over 48 and under 56	Over 56 and under 60	60	Over 60 and under 72	Over 72 and under 84					84 and over	
Charging-machine operators.....	3	15	6.2	8.8	54.8	23	14					9			82.3	\$48.95	\$0.595	\$32.61
Reheaters.....	3	8	6.5	9.0	59.0	10	5	3					2		105.3	94.49	.897	52.95
Reheaters' helpers.....	2	5	6.2	8.8	54.8	8	6								77.0	40.14	.521	28.56
Roll engineers.....	6	21	6.4	8.9	57.0	24	6	3	4			11			120.3	89.87	.747	42.57
Rollers.....	5	12	6.3	8.8	55.8	12		8				4			127.2	226.85	1.783	99.49
Rollers' helpers.....	6	15	6.4	8.8	56.5	18		12		2	4				110.5	108.49	.982	55.49
Table lever men.....	7	67	6.4	8.6	54.8	83		61			22				97.9	73.44	.750	41.09
Table men.....	4	23	6.5	9.2	59.6	30		14			16				101.7	66.14	.650	38.76
Guide setters.....	7	34	6.4	9.0	57.1	37		20		9	8				121.3	98.29	.810	46.27
Hot-saw men.....	7	22	6.2	8.9	55.7	27	4	11		7	5				102.0	64.92	.636	35.45
Hot-saw men's helpers.....	6	53	6.4	8.8	55.9	88	11	40		13	24				75.0	38.25	.511	28.54
Hotbed lever men.....	7	49	6.3	8.6	54.3	64	8	33		10	13				95.1	56.55	.594	32.28
Hotbed men.....	6	45	6.4	8.5	54.2	64	6	41		12	5				83.5	39.00	.467	25.33
Straighteners, gag press.....	7	131	6.4	8.4	53.7	158	36	88		25	9				91.2	104.11	1.142	61.33
Straighteners' helpers.....	7	177	6.4	8.9	56.9	300	63	115		27	12	83			70.2	39.02	.556	31.65
Chippers.....	7	129	6.3	8.7	54.9	193	38	93		41	21				75.0	51.65	.689	37.82
Drillers and punchers.....	7	226	6.3	9.1	57.5	347	68	144		63	28	44			81.7	48.63	.595	34.21
Cold-saw men.....	7	16	6.1	9.1	55.5	24	12			8		4			89.7	44.57	.497	27.69
Cold-saw men's helpers.....	6	65	6.1	9.2	55.7	141	63			61	6	11			56.4	24.99	.443	24.69
Inspectors.....	7	79	6.2	9.3	57.9	95	31	13		29	12	10			112.1	59.47	.530	30.71
Laborers.....	7	154	6.3	10.2	63.6	404	95	17				163	36		51.5	19.86	.385	24.51

STANDARD RAIL MILLS

Table D (7) shows the number of employees and the average and classified earnings per hour of guide setters and straighteners in 1924. Figures are not shown for the separate districts, but all districts have been combined. These two occupations are selected as representative of the spread or variation in hourly earnings within the occupations in this department.

The average hourly earnings for guide setters was 81 cents and for straighteners \$1.142. The range of earnings for straighteners was considerably above that for guide setters.

TABLE D (7).—AVERAGE AND CLASSIFIED EARNINGS PER HOUR IN TWO SELECTED OCCUPATIONS, 1924—STANDARD RAIL MILLS

[For explanation of this table see p. 15]

Occupation	Number of employees	Average earnings per hour	Number of employees whose earnings per hour were—											
			35 and under 40 cts.	40 and under 50 cts.	50 and under 60 cts.	60 and under 70 cts.	70 and under 80 cts.	80 and under 90 cts.	90 cts. and under \$1	\$1 and under \$1.25	\$1.25 and under \$1.50	\$1.50 and under \$2	\$2 and under \$2.25	
Guide setters.....	37	\$0.810	1		8	2	4	13		9				
Straighteners.....	158	1.142		1	2	3	7	16	33	50	32	13		1

The customary turns per week and hours per turn and per week, together with the average full-time hours per week, of employees in the rail mill department are shown in detail for the year 1924 in Table E (7). Figures are not shown by separate districts but all districts have been combined. The information was obtained from 7 plants and covers 3,382 employees in all occupations.

The table shows the customary number of day turns and night turns per week and the corresponding hours for each turn for each day of the week as well as the full-time hours per week. Employees are divided into three groups as follows: (a) Those who work days only, (b) those who work nights only, and (c) those who alternate or rotate weekly from one shift to another. The order of arrangement begins with the highest average full-time hours per week.

Gas or repair turns have been disregarded when employees customarily work such turns at less frequent intervals than once every three weeks on a 3-turn basis or once every four weeks on a 2-turn basis. In a few instances relief systems have also been omitted where the periods elapsing between reliefs were longer than three or four weeks.

In some instances in the table hours are reported for 7 days, yet the number of days worked is given as 6. This is owing to the fact that it is a 7-day occupation wherein each employee was relieved 1 day in 7 with no information available, however, as to which day; therefore, the hours for all days have been shown and the relief indicated in the full-time hours per week.

In the main the table is believed to be clear, but some points may need explanation. The first line of the table shows that in the plants canvassed 1 man was found on a day job requiring him to work

6 days per week and 12 hours per day one week followed by 7 days of 12 hours the next, or an average of 78 hours per week.

In the third section of the table the first line shows that 8 men alternated from 7 turns of 10 hours on day work to 7 turns of 14 hours on night work, or an average of 84 hours per week.

When there are three 8-hour turns, the second and third are tabulated as night turns.

TABLE E (7).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924—STANDARD RAIL MILLS

[For explanation of this table see p. 15]

Customary turns and hours worked										Average hours per week	Number of employees who worked each specified combination of customary turns and hours
Day turns					Night turns						
Turns per week	Hours				Turns per week	Hours					
	Monday to Friday	Saturday	Sunday	Per week		Monday to Friday	Saturday	Sunday	Per week		
EMPLOYEES WHO WORKED DAY TURNS ONLY											
6	12	12	-----	72	-----	-----	-----	-----	-----	78	1
7	12	12	12	84	-----	-----	-----	-----	-----	72	14
6	12	12	12	72	-----	-----	-----	-----	-----	71	1
6	12	11	-----	71	-----	-----	-----	-----	-----	70	67
7	10	10	10	70	-----	-----	-----	-----	-----	66	9
6	11	11	-----	66	-----	-----	-----	-----	-----	66	1
7	10	10	6	66	-----	-----	-----	-----	-----	65	1
6	11	10	-----	65	-----	-----	-----	-----	-----	65	2
6	10	10	-----	60	-----	-----	-----	-----	-----	65	1
7	10	10	10	70	-----	-----	-----	-----	-----	60	86
7	10	10	5	65	-----	-----	-----	-----	-----	60	211
6	10	10	10	60	-----	-----	-----	-----	-----	60	3
6	10	10	10	60	-----	-----	-----	-----	-----	58	79
6	10	10	-----	60	-----	-----	-----	-----	-----	56	8
6	10	8	8	58	-----	-----	-----	-----	-----	48	20
7	8	8	8	56	-----	-----	-----	-----	-----	48	504
6	8	8	8	48	-----	-----	-----	-----	-----	-----	-----
6	8	8	8	48	-----	-----	-----	-----	-----	-----	-----
Total	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
EMPLOYEES WHO WORKED NIGHT TURNS ONLY											
-----	-----	-----	-----	-----	7	10	10	10	70	70	2
-----	-----	-----	-----	-----	6	11	11	11	66	66	1
-----	-----	-----	-----	-----	6	10	10	10	60	60	5
-----	-----	-----	-----	-----	6	10	10	-----	60	60	12
-----	-----	-----	-----	-----	7	8	8	8	56	56	16
-----	-----	-----	-----	-----	6	8	8	8	48	48	2
Total	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	38
EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER											
7	10	10	10	70	7	14	14	14	98	84	8
7	11	11	11	77	7	13	13	13	91	84	2
7	12	12	12	84	7	12	12	12	84	84	6
6	11	11	-----	66	7	13	13	13	91	78½	14
6	12	12	-----	72	7	12	12	12	84	78	231
6	11	10	-----	65	7	11	11	10	76	70½	5
7	10	10	10	70	7	10	10	10	70	70	68
7	10	10	10	70	6	10	10	-----	60	65	25
6	10	10	10	60	7	10	10	10	70	60	267
6	10	10	10	60	6	10	10	10	60	60	73
6	10	10	-----	60	6	10	10	-----	60	60	305
6	9	9	8	62	6	9	9	-----	54	58	3
7	9	9	8	62	6	9	8	-----	53	57½	1

TABLE E (7).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924—STANDARD RAIL MILLS—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours	
Day turns					Night turns						Average hours per week
Turns per week	Hours				Turns per week	Hours					
	Monday to Friday	Saturday	Sunday	Per week		Monday to Friday	Saturday	Sunday	Per week		
7	8	8	11	59	6	8	8	8	48	56	9
7	8	8	8	56	7	8	8	13	61	56	58
7	8	8	8	56	7	8	8	8	56	56	26
6	8	8	8	48	7	8	8	8	56	53½	407
6	8	8	-----	48	7	8	8	8	56	53½	565
7	8	8	8	56	6	8	8	-----	48	52	20
6	8	11	-----	51	6	8	11	-----	51	51	12
7	8	8	8	56	6	8	8	-----	48	50½	2
6	8	10	-----	50	6	8	-----	8	48	48½	21
6	8	9	-----	49	6	8	-----	8	48	48½	32
6	8	8	-----	48	6	8	-----	8	48	48	383
6	8	8	-----	48	6	8	8	-----	48	48	297
Total	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	2,840

Of the total number of rail-mill employees reported, 334, or 10 per cent, worked 7 days per week all the time and 1,552, or 46 per cent, worked a week of 7 turns at least once every three or four weeks. As to the hours of labor, 277, or 8 per cent of all employees, worked 12 hours per day, 1,128, or 33 per cent, worked 10 hours per day, and 1,957, or 58 per cent, worked a day of 8 hours.

Of the 277 12-hour workers, 16 worked 7 days per week all the time and 246 worked a 7-day week part of the time. Of the 1,128 employees who worked a day of 10 hours, 138 worked 7 days per week all the time and 294 worked 7 days per week part of the time. A majority of the 1,957 8-hour workers worked 7 days per week—179 all the time and 1,003 a part of the time.

In preparing the summary only the regular hours per turn an employee worked on Monday to Friday are considered, regardless of the length of his turn on Saturday and Sunday.

SUMMARY OF PRINCIPAL GROUPS IN TABLE E (7)

Item	Employees who worked specified days and hours	
	Number	Per cent of total
Total employees in rail mills	3,382	100
Employees who worked—		
7-day week all the time	334	10
7-day week part time	1,552	46
12 or more hours per day	277	8
7-day week and 12 or more hours per day all the time	16	(¹)
7-day week and 12 or more hours per day part of the time	246	7
10 hours per day	1,128	33
7-day week and 10 or more hours per day all the time	138	4
7-day week and 10 or more hours per day part of the time	294	9
8 hours per day	1,957	58
7-day week and 8 hours per day all the time	179	5
7-day week and 8 hours per day part of the time	1,003	30

¹ Less than 1 per cent.

BAR MILLS

Data for 1924 were collected from the pay rolls of 31 bar mills and cover 6,564 employees in all occupations. Of the 6,564 employees reported, 4,569 are found in the principal productive occupations, for which separate figures are given. Data were first obtained for this department in 1907, and comparative figures are presented for the period 1907 to 1924.¹

The year 1924 marks the lowest point of full-time hours per week in the bar-mill department in the period 1907 to 1924. Considering the principal productive occupations, as a whole, average full-time hours per week in 1924 were 9 per cent less than in 1922 and 11 per cent less than in 1913. This reduction was caused by a large number of plants which in former years had operated 10 or more hours per day adopting the 8-hour shift for all employees.

The study also shows there was a large increase in earnings per hour in 1924 as compared with any other year for which data are presented except 1919 and 1920. Hourly earnings in the principal productive occupations combined were 3 per cent higher in 1919 than in 1924 and were 21 per cent higher in 1920. The 1924 hourly earnings, however, were 20 per cent above those in 1922 and 107 per cent above those in 1913; in other words, more than double the hourly earnings of 1913.

The increase in hourly earnings was more than enough to compensate for the reduction of hours, and weekly earnings in 1924 still show an increase as compared with all other years except 1919 and 1920.

The most significant facts concerning average earnings and average hours in each of the principal productive occupations of bar mills are shown in Table A (8). While the customary working time of the 18 occupations combined is 9 per cent less in 1924 than in 1922, when considered separately decreases in the average full-time hours per week ranged from 2.4 hours per week for catchers to 11.9 hours for bundlers.

Bundlers customarily worked 66.9 hours per week in 1907 and continued to work approximately those hours until 1911 when the average was reduced to 62 hours. Working time did not fluctuate to any great extent during the period 1911 to 1915, but in 1919 the average of full-time hours per week was advanced to 68.8 hours. This increase was followed by a sharp decline in 1920 to an average of 60.9 hours per week full-time, and the reduction continued in 1922 to 57.8 hours, and in 1924 dropped to the new low average of 45.9 hours per week. Lesser but similar changes took place in the other occupations.

Average earnings per hour increased in each of the 18 principal productive occupations in 1924 as compared with 1922 and all other years except 1919 and 1920. The 1920 figures are higher in each occupation than those in 1924, and the averages in 1919 are greater in all but three of the occupations. For example, the average of earnings per hour of laborers, which occupation comprises a large percentage of the employees in the principal productive occupations, was less

¹ No data were collected for the years 1916, 1917, 1918, 1921, and 1923.

than 20 cents per hour in 1907 to 1915, but in 1919 earnings were advanced to an average of 44.3 cents per hour. The increase was continued to 50.6 cents per hour in 1920 but dropped back to 31.6 cents in 1922. The average was increased in 1924 to 39.2 cents per hour. Table A (8) shows like figures for the other occupations as well.

Average full-time earnings per week are below those for 1919 and 1920 for each occupation but show increases over those for all other years.

The distribution of employees according to their full-time hours per week, contained in Table A (8), shows the extent to which full-time hours have been reduced in 1924 as compared with other years in this department.

Eighty per cent or more of the employees in all but two of the principal productive occupations in 1924 worked a week of 60 hours or less, and in 12 of those occupations over 90 per cent of the employees were on that basis.

Index numbers for full-time hours per week, earnings per hour, and full-time weekly earnings are also contained in Table A (8). These are simply percentages computed from the averages presented in the table, using the average for 1913 as the base or 100 per cent. Index numbers for the department as a whole (all principal productive occupations combined) are shown on page 5.

TABLE A (8).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—BAR MILLS

[For explanation of this table see p. 13]

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—						
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	60	Over 60 and under 72	72	Over 72 and under 84	84
Stockers:															
1907.....	8	93	64.4	\$0.178	\$11.43	107	82	89	-----	9	9	70	9	4	-----
1908.....	8	90	64.1	.167	10.72	106	77	83	-----	11	9	66	14	-----	-----
1909.....	8	88	64.2	.168	10.79	107	78	84	-----	9	9	78	3	-----	-----
1910.....	13	170	59.0	.250	14.24	98	116	110	-----	16	25	4	51	5	-----
1911.....	15	211	60.9	.217	12.94	101	100	100	-----	13	19	21	34	13	-----
1912.....	15	217	60.9	.231	13.79	101	107	107	-----	12	17	27	31	13	-----
1913.....	31	374	60.2	.216	12.89	100	100	100	-----	4	25	34	36	1	-----
1914.....	41	603	60.4	.199	12.00	100	92	93	-----	2	33	18	43	4	-----
1915.....	41	582	60.2	.198	11.91	100	92	92	-----	1	46	9	39	4	-----
1919.....	15	298	63.7	.524	33.38	106	243	259	-----	1	9	31	51	9	-----
1920.....	22	458	61.5	.612	37.69	102	283	292	-----	7	26	7	51	8	-----
1922.....	22	352	59.2	.420	24.90	98	194	193	-----	11	40	5	34	10	-----
1924.....	25	298	56.0	.502	28.20	93	232	219	-----	22	41	17	18	2	-----
Heaters:															
1907.....	15	121	63.9	.508	32.35	107	86	93	-----	2	13	2	70	10	-----
1908.....	15	112	63.9	.467	29.66	107	79	85	-----	3	18	2	61	15	-----
1909.....	15	112	64.0	.488	31.06	107	83	89	-----	3	18	2	70	4	-----
1910.....	25	217	62.9	.507	31.73	105	86	91	-----	8	13	7	58	10	-----
1911.....	26	184	62.7	.510	31.87	105	86	92	-----	10	17	1	60	9	-----
1912.....	26	199	62.4	.482	29.84	105	82	86	-----	9	22	1	57	9	-----
1913.....	44	295	59.7	.590	34.74	100	100	100	-----	10	37	1	46	3	-----
1914.....	57	409	59.9	.548	32.49	100	93	94	-----	9	34	1	52	2	-----
1915.....	57	392	60.1	.562	33.50	101	95	96	-----	9	35	(1)	52	3	-----
1919.....	23	209	61.7	1.147	70.77	103	194	204	-----	13	1	17	60	8	-----
1920.....	24	213	60.1	1.176	70.73	101	199	204	-----	13	27	2	52	2	-----
1922.....	23	169	59.9	.759	45.50	100	129	131	-----	9	34	-----	51	4	-----
1924.....	28	181	55.3	.949	53.03	93	161	153	-----	31	25	12	31	-----	-----

¹ Less than 1 per cent.

TABLE A (8).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—BAR MILLS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—						
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84		
Heaters' helpers:															
1907	14	167	65.3	\$0.246	\$15.77	108	91	97	2	12	2	65	16	4	
1908	14	153	65.1	.227	14.50	108	84	89	2	16	3	56	21	3	
1909	14	151	65.0	.234	14.87	107	87	92	2	16	3	74	1	4	
1910	24	295	62.6	.273	16.77	103	101	103	16	11	8	52	11	1	1
1911	25	293	62.7	.259	15.94	104	96	98	16	13	2	55	10	3	
1912	25	319	62.2	.260	16.01	103	97	99	14	23	2	50	9	1	
1913	42	467	60.5	.269	16.21	100	100	100	8	42	2	44	4		(1)
1914	54	582	60.9	.265	16.09	101	99	99	6	36	1	52	5		(1)
1915	54	570	60.3	.272	16.37	100	101	101	11	32	(1)	50	5		(1)
1919	21	323	60.7	.655	39.76	100	243	245	24	1	17	46	10	1	
1920	23	435	59.5	.744	44.16	98	277	272	14	30	5	46	2	3	
1922	25	326	59.1	.517	30.56	98	192	189	6	52		38	3		
1924	28	312	54.7	.630	34.86	90	234	215	29	38	21	12	1		
Chargers and helpers:															
1907	12	104	65.5	.173	11.34	105	77	81		10	5	68	15	2	
1908	12	102	65.6	.161	10.56	105	71	75		10	5	66	20		
1909	12	107	65.9	.161	10.60	105	71	76		9	4	75	7	5	
1910	18	179	65.3	.192	12.40	104	85	89	7	8	7	59	20		
1911	19	185	64.8	.184	11.90	104	81	85	6	14	3	59	18		
1912	19	182	65.0	.192	12.45	104	85	89	5	13	3	61	18		
1913	31	262	62.5	.226	14.00	100	100	100	4	27	2	63	3	1	
1914	41	346	61.9	.219	13.47	99	97	96	4	32	1	62	1	1	
1915	41	338	61.7	.222	13.56	99	98	97	9	27	(1)	62	2	1	
1919	14	189	62.4	.561	35.01	100	248	250	17	10	5	55	10	3	1
1920	19	328	61.9	.636	39.45	99	281	282	5	28	2	60	5		
1922	21	293	61.2	.427	26.24	98	189	187	6	36	2	38	18		
1924	26	295	54.9	.540	29.58	88	239	211	32	22	34	12			
Drag-downs:															
1907	11	86	64.4	.271	17.31	106	96	102		19		60	19	2	
1908	11	82	63.9	.246	15.58	105	87	92		24		52	23		
1909	11	83	64.0	.250	15.93	105	89	94		18		70	4	2	
1910	19	132	65.1	.269	17.44	107	95	103		24	3	57	19	3	
1911	20	127	64.7	.262	16.78	106	93	99		25		55	20	2	
1912	20	130	64.3	.253	16.12	106	90	95		24		54	19	2	
1913	33	186	60.8	.282	16.98	100	100	100	9	38	1	44	7	2	
1914	45	265	60.7	.277	16.58	100	98	98	6	38		40	6	1	
1915	45	256	61.1	.280	16.96	100	99	100	5	36		51	7	1	
1919	18	131	64.9	.696	45.17	107	247	266	3	11		62	21		
1920	20	205	60.6	.725	43.33	100	257	255	17	16	2	59	6		
1922	20	161	59.7	.470	27.98	98	167	165	7	52		32	8		
1924	26	187	55.2	.560	31.12	91	199	183	32	20	36	13			
Roll engineers:															
1907	13	58	72.3	.226	16.29	104	91	95				53	9	31	7
1908	13	56	71.4	.221	15.76	103	89	92				50	18	30	4
1909	13	56	71.5	.217	15.52	103	88	91				54	11	32	4
1910	22	99	72.0	.229	16.46	104	93	96			3	40	26	23	7
1911	22	95	70.4	.228	16.07	102	92	94			3	57	14	24	2
1912	22	97	70.0	.229	16.05	101	93	94				53	12	26	2
1913	41	153	69.2	.247	17.06	100	100	100				45	16	22	4
1914	52	183	68.8	.247	16.97	99	100	99			6	47	27	11	4
1915	52	178	68.9	.246	16.77	99	100	98			6	49	27	12	2
1919	21	94	70.2	.558	39.17	101	226	230	2	15		31	35	2	15
1920	22	109	69.7	.657	45.65	101	266	268	2	2	3	39	12	39	3
1922	22	100	69.1	.473	32.75	100	194	192	3	10		43	23	19	3
1924	24	106	60.9	.569	34.55	88	230	203	13	31	3	42	8		4

¹ Less than 1 per cent.

TABLE A (8).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—BAR MILLS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—						
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under 60	Over 48 and under 60	60	Over 60 and under 72	72	Over 72 and under 84	84
Rollers:															
1907	13	65	65.5	\$1.013	\$66.88	110	103	114	17	17	43	18	5	---	
1908	13	63	65.7	.878	57.88	111	89	98	19	13	44	19	5	---	
1909	13	63	65.5	.917	60.40	110	93	103	19	13	52	16	---	---	
1910	22	124	62.4	.928	58.21	105	94	99	12	16	13	47	12	---	
1911	23	120	62.0	.873	54.65	105	89	93	13	22	8	43	15	---	
1912	24	128	61.6	.863	53.60	104	88	91	12	26	9	38	16	---	
1913	42	173	59.3	.985	58.85	100	100	100	56	---	43	1	---	---	
1914	56	216	59.6	.936	56.13	101	95	95	49	---	51	---	---	---	
1915	56	215	59.4	.944	56.75	100	96	96	51	---	49	---	---	---	
1919	23	108	61.3	1.821	111.62	103	185	190	22	4	21	42	8	2	1
1920	25	141	59.5	1.949	116.13	100	198	197	11	26	16	37	11	---	---
1922	25	119	58.4	1.416	82.35	98	144	140	5	61	3	25	5	---	---
1924	30	126	53.9	1.577	85.28	91	160	145	30	42	21	7	---	---	---
Roughers:															
1907	15	252	61.5	.434	26.28	103	100	101	13	20	5	44	17	---	---
1908	15	242	62.5	.343	21.35	105	79	82	10	23	5	40	22	---	---
1909	15	243	62.4	.368	22.72	104	84	87	10	23	5	57	6	---	---
1910	25	425	61.0	.402	24.51	102	92	94	17	20	8	46	9	---	---
1911	26	403	60.5	.377	22.68	101	86	87	18	24	3	46	9	---	---
1912	26	408	60.2	.389	23.36	101	89	90	18	25	3	45	9	---	---
1913	26	407	59.8	.436	26.00	100	100	100	6	46	1	43	4	---	---
1914	57	385	58.8	.436	25.41	98	100	98	2	65	---	32	---	---	---
1915	57	386	58.9	.438	25.76	98	100	99	2	62	---	36	---	---	---
1919	23	202	60.7	.933	56.63	102	214	218	21	10	10	46	13	3	---
1920	25	319	57.8	1.034	59.46	97	237	229	16	44	1	36	3	---	---
1922	25	288	57.3	.709	40.41	96	163	155	9	58	---	27	6	---	---
1924	31	263	54.7	.810	44.61	91	186	172	22	46	25	7	---	---	---
Catchers:															
1907	11	69	62.5	.442	27.68	108	99	108	42	1	36	20	---	---	---
1908	11	70	62.0	.381	23.57	107	86	92	46	---	34	20	---	---	---
1909	11	70	61.9	.400	24.93	107	90	97	46	---	54	---	---	---	---
1910	20	115	60.2	.419	25.45	104	94	99	13	35	5	40	7	---	---
1911	20	111	59.9	.392	23.70	103	88	92	14	39	---	41	7	---	---
1912	20	110	59.7	.399	23.92	103	90	93	14	39	---	40	7	---	---
1913	44	222	58.1	.445	25.73	100	100	100	3	63	---	33	1	---	---
1914	57	293	58.6	.430	25.03	101	97	97	2	60	---	38	---	---	---
1915	57	296	58.8	.432	25.35	101	97	99	2	60	---	38	---	---	---
1919	23	187	60.6	.896	56.72	104	210	220	23	11	7	46	13	4	---
1920	25	217	57.9	1.022	58.68	100	230	228	19	38	1	38	4	---	---
1922	25	191	57.2	.725	41.33	98	163	161	10	59	---	22	9	---	---
1924	31	215	54.8	.818	45.12	94	184	175	22	46	27	6	---	---	---
Stranders:															
1907	13	175	59.5	.334	19.45	102	97	97	22	17	11	34	15	---	---
1908	13	174	59.7	.277	16.25	102	80	81	22	17	11	32	17	---	---
1909	13	174	59.7	.297	17.34	102	86	88	22	17	11	42	7	---	---
1910	21	272	60.6	.301	17.85	104	87	89	18	16	14	40	13	---	---
1911	22	262	59.8	.272	16.03	103	79	80	18	27	8	34	13	---	---
1912	22	266	59.6	.283	16.62	102	82	82	18	28	8	33	13	---	---
1913	42	491	58.3	.345	20.15	100	100	100	64	---	28	35	1	---	---
1914	56	635	58.4	.318	18.57	100	92	92	57	---	11	31	(0)	---	---
1915	56	615	58.1	.326	18.99	100	94	94	77	---	23	(0)	---	---	---
1919	23	381	59.5	.762	45.34	102	221	225	26	13	8	44	9	---	---
1920	25	525	57.6	.849	48.79	99	246	242	14	46	1	36	3	---	---
1922	25	474	56.6	.577	32.31	97	167	160	9	65	---	20	6	---	---
1924	29	427	53.0	.700	36.92	91	203	183	34	42	16	7	---	---	---
Finishers:															
1907	10	65	65.9	.309	20.45	111	88	98	12	14	48	26	---	---	---
1908	10	63	66.4	.279	18.53	111	80	89	13	11	49	27	---	---	---
1909	10	63	66.2	.300	19.85	111	86	96	13	10	68	10	---	---	---
1910	17	111	64.0	.323	20.48	107	92	99	14	7	9	55	15	---	---
1911	19	121	62.8	.313	19.60	105	89	94	12	20	7	45	17	---	---
1912	21	137	62.0	.328	20.29	104	94	98	11	31	7	38	13	---	---
1913	40	182	59.6	.350	20.77	100	100	100	61	---	33	35	2	---	---
1914	54	223	60.0	.341	20.42	101	97	98	43	---	1	55	---	---	---
1915	54	222	59.8	.352	20.95	100	101	101	48	---	1	51	---	---	---
1919	22	123	61.6	.766	47.19	103	219	227	16	13	13	46	11	---	---
1920	24	177	60.0	.866	52.05	101	247	251	9	34	5	44	7	---	---
1922	25	165	57.9	.638	36.56	97	182	176	10	56	---	25	9	---	---
1924	30	185	54.0	.749	40.35	91	214	194	25	47	23	5	---	---	---

¹ Less than 1 per cent.

TABLE A (8).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—BAR MILLS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—					
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under 60	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84	
Hook-ups:														
1907	12	92	63.9	\$0.268	\$17.30	107	92	100	10	3	9	52	26	
1908	12	84	65.3	.225	14.70	110	77	85	4	5	17	42	33	
1909	12	82	65.7	.241	15.82	110	83	91	4	5	10	57	24	
1910	20	174	63.2	.272	17.13	106	93	99	16	6	11	43	25	
1911	21	154	63.0	.250	15.66	106	86	90	14	14	6	44	23	
1912	22	177	61.9	.254	15.74	104	87	91	12	24	8	36	20	
1913	36	227	59.6	.291	17.32	100	100	100		46		48	5	
1914	47	262	59.8	.268	16.03	100	92	93		48		52		
1915	47	245	60.3	.270	16.25	101	93	94		41		59		
1919	21	156	59.6	.641	38.20	100	220	221	22	20	13	32	13	
1920	24	277	57.7	.771	43.83	97	265	253	18	35	1	37	9	
1922	25	213	59.0	.516	30.17	99	177	174	15	46		28	12	
1924	29	317	54.8	.601	33.30	92	207	192	23	41	31	4		
Roll hands, other:														
1907	9	97	66.8	.278	18.53	106	88	93	6	4	4	40	45	
1908	9	94	67.0	.255	16.97	106	81	85	6	4	4	40	45	
1909	9	94	66.8	.266	17.65	106	84	88	6	4	4	70	15	
1910	18	180	62.8	.295	18.35	99	93	92	22	10	4	44	20	
1911	18	177	62.5	.273	16.97	99	86	85	22	13	2	42	20	
1912	18	176	62.7	.287	17.97	99	91	90	20	13	2	44	20	
1913	24	199	63.2	.316	20.02	100	100	100		24		76		
1914	37	240	63.2	.285	17.92	100	90	90		21		79		
1915	37	235	62.6	.291	18.23	99	92	91		26		74		
1919	18	174	62.1	.684	42.48	98	216	212	17	10	2	60	11	
1920	20	352	60.7	.758	45.99	96	240	230	5	41	(1)	45	9	
1922	20	353	59.5	.545	32.36	94	172	162	13	46		30	12	
1924	24	304	53.2	.702	37.52	84	222	187	41	27	28	4		
Hotbed men:														
1907	15	302	63.3	.189	11.98	105	87	92	4	21	14	43	19	
1908	15	299	63.2	.174	10.93	105	80	84	4	21	19	35	21	
1909	15	286	63.3	.180	11.00	105	83	84	4	22	15	54	5	
1910	25	500	62.9	.200	12.46	104	92	95	11	16	14	43	12	3
1911	26	450	61.9	.183	11.61	103	87	89	12	24	6	48	9	
1912	26	461	61.7	.192	11.80	102	88	90	12	26	5	45	11	
1913	43	600	60.3	.217	13.06	100	100	100	7	43	2	45	4	
1914	56	714	60.3	.213	12.77	100	98	98	5	42	2	47	4	
1915	56	721	60.0	.216	12.83	100	100	98	14	34		43	8	
1919	23	497	59.4	.545	32.37	99	251	248	27	15	8	41	9	
1920	24	727	58.8	.618	36.46	98	285	279	9	45	(1)	41	4	
1922	25	755	58.3	.439	25.48	97	202	195	7	56		28	8	
1924	30	679	53.8	.538	28.97	89	248	222	30	42	23	5		
Shearmen:														
1907	15	94	64.8	.249	16.20	108	89	97		15	16	51	18	
1908	15	92	65.1	.216	14.10	108	77	84		15	18	46	21	
1909	15	93	65.3	.225	14.72	108	80	88		15	18	59	3	4
1910	25	150	63.3	.264	16.40	105	94	98	10	16	14	46	10	4
1911	25	151	62.5	.254	15.55	104	89	93	10	23	12	45	11	
1912	24	156	62.4	.251	15.40	104	89	92	10	24	10	43	12	1
1913	41	218	60.2	.281	16.74	100	100	100	5	42	9	41	2	1
1914	54	263	60.5	.280	16.78	100	100	100	4	38	9	46	3	
1915	54	264	60.5	.283	17.56	100	104	105	11	31	6	47	5	
1919	22	145	60.9	.634	38.61	101	226	231	15	23	8	46	8	
1920	25	216	58.2	.752	43.99	97	268	263	14	42	4	37	3	
1922	24	178	59.2	.526	30.79	98	187	184	4	58		25	10	3
1924	28	181	53.4	.631	34.10	89	225	204	33	35	25	7		

¹Less than 1 per cent.

TABLE A (8).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1907 TO 1924, BY OCCUPATION—BAR MILLS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—					
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84	
Shearmen's helpers:														
1907	15	201	65.9	\$0.174	\$11.46	105	83	88	6	10	62	20	1	---
1908	15	172	66.2	.168	11.07	106	80	85	7	13	59	17	5	---
1909	15	185	67.3	.169	11.32	107	81	87	6	14	59	4	16	---
1910	23	355	64.7	.187	12.02	103	89	93	13	3	12	45	22	6
1911	23	359	63.8	.178	11.28	102	85	87	13	8	10	50	18	---
1912	23	358	63.9	.184	11.74	102	88	90	13	9	10	46	18	3
1913	35	418	62.7	.209	12.98	100	100	100	4	24	6	61	3	2
1914	48	487	62.7	.201	12.67	100	96	97	3	24	6	63	5	---
1915	48	471	62.3	.203	12.66	99	97	98	10	20	4	60	7	---
1919	19	399	62.3	.513	31.96	99	245	246	17	9	6	55	12	1 (1)
1920	22	507	60.8	.615	37.39	97	294	288	7	40	3	48	1	1
1922	23	610	60.8	.415	25.27	97	199	195	6	47	3	35	10	3
1924	27	500	52.9	.524	27.92	84	251	215	33	32	30	35	5	---
Bundlers:														
1907	5	41	66.9	.202	13.53	109	93	101	---	---	---	76	24	---
1908	5	41	66.9	.174	11.68	109	80	87	---	---	---	76	24	---
1909	5	41	66.8	.186	12.42	109	85	93	---	---	---	100	---	---
1910	6	77	66.1	.207	13.69	108	95	102	---	---	---	100	---	---
1911	7	131	62.0	.197	12.20	101	90	91	---	66	---	34	---	---
1912	7	132	62.0	.193	11.94	101	89	89	---	65	---	35	---	---
1913	12	178	61.4	.218	13.88	100	100	100	---	71	2	27	---	---
1914	13	178	63.9	.203	12.97	104	93	97	---	43	2	55	---	---
1915	13	210	64.4	.208	13.38	105	95	100	---	37	1	58	4	---
1919	6	115	68.3	.529	36.40	112	243	272	---	2	4	37	57	---
1920	10	151	60.9	.555	33.80	99	255	253	2	65	6	27	---	---
1922	10	181	57.8	.382	22.29	94	175	167	---	68	1	28	3	---
1924	11	184	45.9	.526	24.16	75	241	181	89	6	4	2	---	---
Laborers:														
1907	10	296	68.3	.153	10.44	109	91	98	(1)	17	47	25	8	2
1908	10	227	64.8	.153	9.93	104	91	93	1	41	48	8	---	2
1909	10	324	67.8	.150	10.17	108	89	95	---	1	23	42	27	2
1910	15	511	67.8	.160	10.86	108	95	102	---	2	29	25	36	(1)
1911	17	390	65.5	.159	10.40	105	94	98	---	9	27	45	18	1
1912	21	536	65.0	.160	10.38	104	95	97	---	23	15	43	18	1
1913	42	891	62.5	.169	10.66	100	100	100	(1)	28	33	33	2	5
1914	54	1,039	65.8	.178	11.00	101	102	103	1	18	31	42	7	1 (1)
1915	54	1,029	62.9	.178	10.91	101	102	102	1	22	27	41	8	1
1919	21	1,058	65.1	.443	29.28	106	262	275	2	9	18	45	18	5 (2)
1920	20	816	65.1	.506	33.12	104	290	311	6	20	11	35	27	1
1922	23	806	64.5	.316	21.84	103	187	202	2	29	13	31	23	1 (1)
1924	30	936	57.5	.392	23.06	92	232	216	15	37	39	5	3	---

¹ Less than 1 per cent.

² Including 1 per cent whose full-time hours per week were 84½, and less than 1 per cent whose full-time hours per week were 91.

The customary working time per week of all employees covered in the bar mills in each of the 5 years, 1914, 1915, 1920, 1922, and 1924³ has been classified and the number and per cent of employees coming under each classification are shown in Table B (8).

The working time of employees in the bar mills shows a wide variation of days or turns per week—5 days, 6 days, and 7 days, with the many combinations thereof. However, the large majority of employees in each year worked either 5 days or 6 days per week, or some combination of those turns.

In 1924, 48 per cent of all employees covered worked 6 days per week, 25 per cent worked 5 days and 6 days alternately, and 8 per cent worked 5 days. Only 5 per cent had any 7-day work.

³ These 5 years are the only ones in which data were collected covering all principal productive and other occupations.

TABLE B (8).—NUMBER AND PER CENT OF EMPLOYEES WHO CUSTOMARILY WORKED EACH SPECIFIED NUMBER OF DAYS PER WEEK, 1914 TO 1924, BY DISTRICT AND YEAR—BAR MILLS

[For explanation of this table see p. 13]

District and year	Number of plants	Number of employees	Number of employees whose customary working days per week were—							Per cent of employees whose customary working days per week were—												
			5	5 and 6 alternately	5, 5, and 6, in rotation	5, 6, and 6, in rotation	6	5 and 7 alternately	6 and 7 alternately	6, 6, and 7, in rotation	6, 7, and 7, in rotation	7	5	5 and 6 alternately	5, 5, and 6, in rotation	5, 6, and 6, in rotation	6	5 and 7 alternately	6 and 7 alternately	6, 6, and 7, in rotation	6, 7, and 7, in rotation	7
			<p>Eastern:</p> <p>1914 15 1,851 69 1,207 3 554 11 7 4 65 (1) 30 (1) 1 (1) 1</p> <p>1915 15 1,876 70 1,211 3 573 12 10 4 65 31 1 1 1</p> <p>1920 6 950 133 425 100 287 5 14 45 11 30 57 (1) 1 (1) 1</p> <p>1922 6 968 9 292 112 553 2 1 30 12 57 1 1 1</p> <p>1924 5 704 6 262 97 339 1 1 37 14 48 1 1 1</p> <p>Pittsburgh:</p> <p>1914 14 3,250 162 1,461 42 1,128 4 64 349 12 28 5 45 1 35 (1) 2 11 (1) (1) 1</p> <p>1915 14 3,366 122 1,549 42 4 1,562 4 56 12 15 4 46 1 (1) 46 (1) 2 2 (1) (1) (1) 1</p> <p>1920 7 3,167 69 958 1,458 11 153 460 38 20 2 30 46 (1) 5 16 1 1 1</p> <p>1922 7 2,624 22 1,057 949 75 477 16 28 1 40 36 3 3 18 1 1 1</p> <p>1924 9 2,686 89 506 257 374 1,313 14 76 21 6 30 3 19 10 14 49 1 3 1 (1) 1</p> <p>Great Lakes and Middle West:</p> <p>1914 19 2,694 77 1,294 120 49 1,085 6 15 10 48 3 48 4 2 40 (1) 1 1 (1) 2 1</p> <p>1915 19 2,484 76 1,246 70 49 989 6 15 10 23 3 50 3 2 40 (1) 1 1 (1) 1 1</p> <p>1920 7 2,079 13 759 200 233 846 22 6 1 37 10 11 41 1 1 (1) 1 1</p> <p>1922 7 2,218 6 829 230 1,035 17 73 3 25 (1) 37 10 47 1 3 3 1 1 1</p> <p>1924 10 2,135 205 841 217 749 10 15 1 25 72 10 39 10 35 (1) 1 1 (1) 1 3</p> <p>Southern:</p> <p>1914 9 1,007 215 219 558 15 21 22 15 21 17 55 59 1 1 1</p> <p>1915 9 1,006 229 172 591 14 23 17 15 23 17 59 59 1 1 1</p> <p>1920 5 787 21 147 606 2 11 3 19 19 77 72 (1) 1 1 1</p> <p>1922 5 907 50 179 651 9 20 2 18 6 20 72 72 1 1 1</p> <p>1924 7 1,039 207 47 768 2 25 20 5 7 73 (1) 1 1 1</p> <p>Total:</p> <p>1914 57 8,802 523 4,171 162 52 3,325 10 90 359 12 98 6 47 2 1 38 (1) 1 4 (1) (1) 1</p> <p>1915 57 8,732 497 4,178 112 53 3,715 10 83 375 22 92 6 48 1 1 42 (1) 1 3 1 1</p> <p>1920 25 6,983 236 2,289 300 233 3,197 11 182 460 38 37 3 33 4 3 46 (1) 1 3 1 1</p> <p>1922 25 6,717 87 2,357 112 230 3,188 17 157 477 19 73 1 35 2 2 3 47 (1) 1 7 (1) 1</p> <p>1924 31 6,564 507 1,656 354 591 3,159 24 93 22 31 127 8 25 5 5 48 (1) 1 1 (1) 2</p>																			

¹ Less than 1 per cent.

Table C (8) presents the most significant facts relative to earnings and hours of labor of employees in the principal productive occupations in the 31 bar mills covered in 1924. The occupations have been arranged as nearly as possible in the order of production, and figures are shown for each district and all districts combined for each occupation.

Referring to the first occupation presented, stockers, the 225 positions were kept filled by a total of 298 men during the pay period scheduled. As stated in the explanation of this table, on page 14, many of the employees worked only part time in this occupation, and 298 men were necessary to keep the 225 positions filled. However, it must not be assumed that these employees worked only as stockers during the period. Many of them worked in other occupations, and the number of employees shown in the separate occupations in the following table can not be combined as the number of employees who worked in the principal productive occupations in this department.

The average customary full time of the 298 men working in the 225 positions was 5.7 turns per week, 9.9 hours per turn, and 56 hours per week. These averages are for all districts combined and do not show the range of the figures for the several districts. The average of full-time hours per week in the Pittsburgh district, for example, was only 54.2, while in the Southern district the average was 58.2 hours.

In the distribution of the customary working time of the 298 employees, 146, or 49 per cent, worked 56 hours per week or less, while the remaining 152 or 51 per cent ranged from over 56 to 72 hours.

The average hourly earnings of stockers ranged from 34.9 cents in the Southern district to 56.9 cents in the Pittsburgh district, with an average of 50.2 cents for all districts combined. Average earnings for the half-month period reached the high point in the Eastern district, \$54.72, owing to the fact that employees in that district worked more hours at this occupation than those in any of the other three districts, or an average of 105.2. In the Pittsburgh district employees averaged only 87.7 hours in this occupation during the 16-day period and received an average of \$49.89 for that time. These averages are only for the occupation under consideration and do not include earnings that employees may have made in other occupations during the same period.

The range for average full-time earnings per week of stockers was from \$20.29 in the Southern district to \$30.84 in the Pittsburgh district. The average for all districts was \$28.20.

TABLE C (8).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND AVERAGE ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND BY DISTRICT—BAR MILLS

[See explanation on p. 3 of adjustment of time worked and earnings received]

Occupation and district	Number of plants	Positions			Employees working in scheduled pay period (16 days) at specified occupation														Average full-time earnings per week		
		Number	Average customary full time of employees in the positions			Number	Number whose customary full-time hours per week were —										Average hours worked	Average earnings in pay period		Average earnings per hour	
			Turns per week	Hours per turn	Hours per week		44 and under	Over 44 and under 48	48	Over 48 and under 56	56	Over 56 and under 60	60	Over 60 and under 72	72	84 and over					
Stockers:																					
Eastern.....	3	66	5.6	10.0	54.4	81	19			27				4	31		105.2	\$54.72	\$0.520	\$29.84	
Pittsburgh.....	8	44	5.7	9.5	54.2	59		13	11	13				8	14		87.7	49.89	.569	30.84	
Great Lakes and Middle West.....	7	69	5.5	10.1	55.2	101	11	12	1	19	33			17	8		85.3	46.66	.547	30.19	
Southern.....	7	46	6.0	9.8	58.2	37				20				9	23	5	101.4	35.37	.349	20.29	
Total.....	25	225	5.7	9.9	56.0	298	30	25	12	60	19	42	52	53	5		94.3	47.33	.502	28.20	
Heaters:																					
Eastern.....	5	40	5.6	10.4	57.6	45	15								30		114.4	92.72	.811	46.68	
Pittsburgh.....	9	65	5.7	9.1	52.0	79	14		19	16	4	10	3	13			99.0	92.05	1.022	53.15	
Great Lakes and Middle West.....	8	19	5.8	9.5	55.0	26		7	2	10				7			74.8	82.70	1.105	60.78	
Southern.....	6	28	5.6	10.9	60.5	31								6	18		115.0	105.34	.916	55.40	
Total.....	28	152	5.6	9.8	55.3	181	29	26	2	26	4	16	21	57			98.2	93.15	.949	53.03	
Heaters' helpers:																					
Eastern.....	5	42	5.6	9.8	55.4	54	16			3		16		19			95.5	56.66	.593	32.87	
Pittsburgh.....	9	117	5.8	9.2	53.1	174	8	28	24	40	7	17	50	7			78.4	50.99	.651	34.56	
Great Lakes and Middle West.....	8	37	5.7	9.7	55.2	62		11	2	30				10	2		65.8	47.63	.724	39.98	
Southern.....	6	21	5.8	10.6	61.5	22							7	8			122.9	55.47	.451	27.76	
Total.....	28	217	5.7	9.5	54.7	312	24	39	26	73	7	40	65	36	2		82.0	51.63	.630	34.86	
Chargers and helpers:																					
Eastern.....	4	15	5.9	9.8	57.9	19				12		3		4			87.3	40.50	.464	26.85	
Pittsburgh.....	9	87	5.8	9.0	52.3	182	19	36	16	16	5	3	57	7			65.8	36.44	.654	28.97	
Great Lakes and Middle West.....	9	67	5.6	10.1	56.2	99		22		10		12	25	30			76.8	45.27	.590	33.13	
Southern.....	4	19	5.7	10.5	59.8	25						4	19	2			108.1	41.86	.387	23.16	
Total.....	26	188	5.7	9.6	54.9	295	19	58	16	38	5	22	101	36			73.7	39.84	.540	29.58	

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Drag-downs:																			
Eastern	4	21	5.5	10.0	55.3	24	8			2		2		12		107.6	55.03	.511	28.27
Pittsburgh	8	55	5.8	9.0	52.4	101	18	13	15	2	8	45				59.6	34.24	.575	30.12
Great Lakes and Middle West	7	20	5.5	10.3	56.2	27	3		2	8		7	2	5		74.8	55.24	.739	41.50
Southern	7	27	5.7	10.5	60.0	35				2	1	6	20	7		96.7	44.99	.466	27.93
Total	26	123	5.7	9.7	55.2	187	29	13	17	14	9	14	67	24		74.9	41.95	.560	31.12
Roll engineers:																			
Eastern	5	16	5.9	11.3	67.2	17				3				13	1	135.7	66.00	.486	32.69
Pittsburgh	8	46	6.0	9.5	56.8	59	10			18		8	3	15	3	98.4	56.79	.577	32.79
Great Lakes and Middle West	10	26	6.0	10.7	64.0	28		4		3				14	4	132.1	33.07	.629	40.24
Southern	1	2	5.5	12.0	65.0	2				3				2	4	168.8	59.08	.350	22.75
Total	24	90	6.0	10.2	60.9	106	10	4		24		9	3	44	8	114.6	65.25	.569	34.55
Rollers:																			
Eastern	5	20	5.7	10.0	56.5	21	3			6		6		6		116.9	157.51	1.347	76.11
Pittsburgh	9	53	5.7	9.0	51.4	63	14		15	15	2	4	13			89.9	151.14	1.681	86.42
Great Lakes and Middle West	9	20	5.6	9.6	54.1	23	2	2	1	8	2	3	3	2		96.4	161.34	1.673	90.50
Southern	7	18	5.7	10.3	57.9	19		1		1	1	5	10	1		120.3	177.34	1.474	85.35
Total	30	111	5.7	9.5	53.9	126	19	3	16	30	5	18	26	9		100.2	158.01	1.577	85.28
Roughers:																			
Eastern	5	38	5.7	9.8	55.7	39	6			21				12		115.3	89.19	.773	43.08
Pittsburgh	9	92	5.6	9.3	52.3	125	16	19	8	52	3		27			102.1	71.01	.824	43.11
Great Lakes and Middle West	10	42	5.6	10.0	55.2	58	2	6	2	16	12	6	9	5		80.9	76.88	.953	52.61
Southern	7	38	5.5	10.8	58.8	41				4	1	5	29	2		112.8	75.43	.669	39.33
Total	31	210	5.6	9.8	54.7	263	24	25	10	93	16	11	65	19		101.1	75.69	.810	44.61
Catchers:																			
Eastern	5	28	5.8	9.6	55.2	35	3			26				6		91.8	65.84	.717	39.60
Pittsburgh	9	67	5.7	9.2	52.6	95	17	10	12	23	3					102.3	66.76	.822	43.22
Great Lakes and Middle West	10	36	5.5	10.2	56.2	56	2	3	1	14	12	9	10	5		75.0	71.80	.955	53.67
Southern	7	23	5.8	10.0	58.1	29				4	2	5	17	1		94.3	67.34	.714	41.50
Total	31	154	5.7	9.6	54.8	215	22	13	13	67	17	14	57	12		92.4	68.00	.818	45.12
Stranders:																			
Eastern	5	46	5.7	9.4	53.5	65	11			46				8		82.6	50.91	.616	32.96
Pittsburgh	9	144	5.6	8.8	49.5	207	40	46	25	52	2		33			73.7	52.53	.713	35.28
Great Lakes and Middle West	9	80	5.5	10.2	56.7	108	4	12		23	19	15	16	19		87.2	70.99	.814	46.14
Southern	6	33	5.9	10.0	58.7	47				2		20	21	4		81.7	39.64	.485	28.48
Total	29	303	5.6	9.4	53.0	427	64	58	25	123	21	35	70	31		79.4	55.53	.700	34.61

BAR MILLS

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TABLE C (8).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND AVERAGE ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND BY DISTRICT—BAR MILLS—Continued

Occupation and district	Number of plants	Positions			Employees working in scheduled pay period (16 days) at specific occupation													Average full-time earnings per week			
		Number	Average customary full time of employees in the positions			Number	Number whose customary full-time hours per week were —								Average hours worked	Average earnings in pay period	Average earnings per hour				
			Turns per week	Hours per turn	Hours per week		44 and under	Over 44 and under 48	48	Over 48 and under 56	56	Over 56 and under 60	60	Over 60 and under 72					72	84 and over	
Finishers:																					
Eastern	5	17	5.6	9.9	55.8	20	3			11						6		103.7	\$68.84	\$0.664	\$437.04
Pittsburgh	8	54	5.6	9.1	51.3	90	13	14	10	22	2				19			75.2	53.45	.777	39.88
Great Lakes and Middle West	10	39	5.6	9.9	55.2	53	3	2		16	15	6			6			84.3	74.56	.884	48.82
Southern	7	20	5.7	10.2	57.4	32		1		3	1	8			17	2		79.9	41.17	.515	29.56
Total	30	130	5.6	9.6	54.0	185	19	17	10	52	21	14	42	10				81.7	61.20	.749	40.35
Hookups:																					
Eastern	5	27	5.7	10.1	57.7	33	4			17						12		93.6	46.70	.499	28.30
Pittsburgh	9	93	5.8	9.3	53.7	158	8	38	3	35	17				57			65.0	37.72	.569	32.17
Great Lakes and Middle West	9	44	5.6	9.6	53.6	79	13	6	2	12	14	16		14		2		62.6	47.93	.766	41.05
Southern	6	30	5.7	10.0	57.0	47				12	3	5		27				82.4	39.33	.477	27.20
Total	29	194	5.7	9.6	54.8	317	25	44	5	76	34	21	98	14				68.9	41.44	.601	33.30
Roll hands, other:																					
Eastern	3	7	5.6	9.3	51.9	10	3			4	1					3		74.9	45.02	.601	31.21
Pittsburgh	8	84	5.7	9.9	50.1	150	28	23	33	43	1				22			61.4	47.83	.780	30.06
Great Lakes and Middle West	8	61	5.7	9.6	54.7	102	11	27		8	19	5			29	3		57.2	42.00	.734	40.16
Southern	5	29	5.5	11.0	59.6	42				1	1				33	7		80.7	36.73	.455	27.11
Total	24	181	5.7	9.5	53.2	304	42	50	33	56	21	5	84	13				63.1	44.25	.702	37.52
Hotbed men:																					
Eastern	4	34	5.8	10.1	58.2	45				33						12		87.2	38.42	.441	25.65
Pittsburgh	9	184	5.7	9.0	51.1	325	41	76	39	93	5				71			63.6	35.87	.564	28.82
Great Lakes and Middle West	10	121	5.6	9.8	54.5	215	26	15	6	16	60	37			36	19		69.8	41.54	.595	32.45
Southern	7	61	5.8	10.1	57.9	94				13	4	26			47	4		76.9	30.68	.399	23.11
Total	30	400	5.7	9.5	53.8	679	67	91	45	155	69	63	154	35				69.0	37.12	.538	28.97

Shearmen:																			
Eastern	4	26	5.7	10.0	56.6	30	4			16				10		111.0	59.54	.537	30.37
Pittsburgh	8	59	5.6	9.0	50.5	80	14	13	12	19	1		21			77.2	53.06	.687	34.70
Great Lakes and Middle West	9	37	5.6	9.7	54.1	49	8	7	1	2	9	5	15	2		85.4	62.23	.729	39.44
Southern	7	18	5.7	10.0	56.8	22				5	1	5	10	1		105.9	46.88	.443	25.13
Total	28	140	5.7	9.5	53.4	181	26	20	13	42	11	10	46	13		88.5	55.86	.631	34.10
Shearmen's helpers:																			
Eastern	3	14	5.7	9.0	51.2	19	3			16						89.8	47.24	.526	26.95
Pittsburgh	8	148	5.7	8.9	50.5	257	18	61	43	55	5		75			62.6	38.89	.541	27.34
Great Lakes and Middle West	9	100	5.6	9.9	54.9	165	21	18	2	10	24	31	35	24		74.9	42.74	.571	31.34
Southern	7	45	5.6	10.1	57.0	59				13	5	1	38	2		96.1	35.73	.372	21.19
Total	27	307	5.6	9.4	52.9	500	42	79	45	94	34	32	148	26		71.6	37.54	.524	27.92
Bundlers:																			
Eastern	2	7	5.7	10.4	59.4	8							5		3	120.3	53.23	.442	26.28
Pittsburgh	4	103	5.5	8.1	44.4	151	98	30	23				5		5	58.8	31.87	.542	24.06
Great Lakes and Middle West	5	15	5.7	8.7	49.9	25	14		3	2			4		2	60.7	29.24	.482	24.03
Total	11	125	5.5	8.4	45.9	184	107	30	26	2			9	7	3	61.7	32.44	.526	24.16
Laborers:																			
Eastern	5	31	5.9	9.8	58.2	40				21			9		10	92.8	34.67	.374	21.76
Pittsburgh	9	202	5.9	9.3	54.8	491	4	33	103	140	3	14	194			49.8	22.46	.451	24.71
Great Lakes and Middle West	10	123	5.6	10.7	59.8	237	2		2	23	40	18	111	35	6	71.8	30.12	.420	25.09
Southern	6	98	6.0	10.1	59.9	168				69		8	64	1	26	83.1	21.77	.262	15.69
Total	30	454	5.9	9.9	57.5	936	6	33	105	253	43	49	369	46	26	63.0	24.70	.392	23.06

Table D (8) shows the number of employees and the average and classified earnings per hour of roughers and hotbed men in 1924, by districts and all districts combined. These two occupations are selected as representative of the spread or variation in hourly earnings within the occupations in this department.

The average of hourly earnings for roughers in the several districts was 81 cents and for hotbed men 53.8 cents. The range of earnings was from 30 cents to \$1.75 per hour for roughers and from 20 cents to \$1.25 for hotbed men.

TABLE D (8).—AVERAGE AND CLASSIFIED EARNINGS PER HOUR IN TWO SELECTED OCCUPATIONS, 1924, BY DISTRICT—BAR MILLS

[For explanation of this table see p. 15]

Occupation and district	Number of employees	Average earnings per hour	Number of employees whose earnings per hour were—												
			20 and under 25 cts.	25 and under 30 cts.	30 and under 35 cts.	35 and under 40 cts.	40 and under 50 cts.	50 and under 60 cts.	60 and under 70 cts.	70 and under 80 cts.	80 and under 90 cts.	90 cts. and under \$1	\$1 and under \$1.25	\$1.25 and under \$1.50	
ROUGHERS															
Eastern.....	39	\$0.773						7	15	6	3			2	6
Pittsburgh.....	125	.824					6	14	18	27	22		7	29	12
Great Lakes and Middle West.....	58	.953			1		5		2	5	10		19	15	1
Southern.....	41	.669				1	7		2	12	10	7	1	1	
Total.....	263	.810			1	1	18	23	47	48	42	27	47	47	19
HOTBED MEN															
Eastern.....	45	.441			7	7	17	8	3	1			1	1	
Pittsburgh.....	325	.564			1	5	78	139	72	15	10		5		
Great Lakes and Middle West.....	215	.595		1	5	3	79	40	46	20	14		4	3	
Southern.....	94	.399	7	11	19	11	24	19	1	1	1				
Total.....	679	.538	7	12	32	26	198	206	122	37	25	10	4		

¹ Includes one employee whose earnings per hour were \$1.75.

The customary turns per week and hours per turn and per week, together with the average full-time hours per week, of employees in the bar mills are shown in detail, by districts, and all districts combined, for the year 1924 in Table E (8). The information was obtained from 31 plants and covers 6,564 employees in all occupations.

The table states the customary number of day turns and night turns per week and the corresponding hours for each turn for each day of the week as well as the full-time hours per week. Employees are divided into three groups as follows: (a) Those who work days only, (b) those who work nights only, and (c) those who alternate or rotate weekly from one shift to another. The order of arrangement begins with the highest average full-time hours per week.

Gas or repair turns have been disregarded when employees customarily worked such turns at less frequent intervals than once every three weeks on a 3-turn basis or once every four weeks on a 2-turn basis. In a few instances relief systems have also been omitted where the periods elapsing between reliefs were longer than three or four weeks.

In some instances in the table, hours are reported for 7 days, yet the number of days worked is given as 6. This is owing to the fact that it is a 7-day occupation wherein each employee was relieved 1 day in 7, with no information available, however, as to which day; therefore, the hours for all days have been shown and the relief indicated in the full-time hours per week.

In the main the table is believed to be clear, but some points may need explanation. The first line of the table shows that in the plants canvassed 3 men in the Pittsburgh district, 5 men in the Great Lakes and Middle West district, and 2 men in the Southern district, or a total of 10 men, were found on day jobs requiring them to work 7 days per week and 12 hours per day—a total of 84 hours per week. The two lines which are bracketed indicate that 3 men in the Great Lakes and Middle West district alternated from 5 days of 10 hours, Monday to Friday, inclusive, and 9 hours on Saturday one week to 5 days of 10 hours, Monday to Friday, inclusive, and 7 hours on Saturday the next week, making an average of 58 hours per week.

In the third section of the table the first line shows that 6 men in Great Lakes and Middle West district alternated from 7 turns of 10½ hours on day work to 7 turns of 13½ hours on night work, averaging 84 hours per week.

When there are three 8-hour turns, the second and third are tabulated as night turns.

TABLE E (8).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—BAR MILLS

[For explanation of this table see p. 15]

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Day turns					Night turns					Average hours per week	East-ern	Pitts-burgh	Great Lakes and Middle West	South-ern	Total
Turns per week	Hours				Turns per week	Hours									
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week						

EMPLOYEES WHO WORKED DAY TURNS ONLY

7	12	12	12	84					84		3	5	2	10
6	12	12		70					72	2	3	39	7	51
6	12	10		70					70				1	1
7	10	10	10	70					70		5	5	9	19
6	12	9		69					69				1	1
6	11½	11½		69					69				2	2
6	12	8		68					68			24	9	33
7	10	8	10	68					68				3	3
6	12	7		67					67	2				2
6	11½	9½		67					67				7	7
7	9½	9½	9½	66½					66½			1		1
6	12	6		66					66	9	13			22
6	11½	8½		66					66	4				4
6	11	11		66					66	1				1
6	10	15		65					65		2			2
6	11	9		64					64				10	10
6	11	8		63					63		2			2
6	10½	10½		63					63		3	5		8
6	11	7½		62½					62½		1			1
6	11	7		62					62	7				7
7	9	9	8	62					62			1		1
6	10½	9		61½					61½				1	1

TABLE E (8).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—BAR MILLS—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Day turns					Night turns										
Turns per week	Hours				Turns per week	Hours				Average hours per week	East-ern	Pitts-burgh	Great Lakes and Middle West	South-ern	Total
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week						

EMPLOYEES WHO WORKED DAY TURNS ONLY—Continued

6	11	6½		61½					61½	8				8	
6	11	6		61					61	1				1	
6	10½	8½		61					61				25	25	
6	10	5	6	61					61		5			5	
5	12			60					60			179	35	214	
6	11	5		60					60	3	2			5	
6	10½	7½		60					60		1			1	
6	10	10		60					60	8	196	99	204	507	
6	10	9½		59½					59½		2			2	
6	10½	6½		59					59		4			4	
6	10	9		59					59		22	6		28	
6	10	8½		58½					58½			16		16	
6	10½	5½		58					58			2		2	
6	10	9		59					59			3		3	
6	10	7		57					57						
6	10	8		58					58		9	19	86	59	173
6	10½	5		57½					57½	17				17	
6	10	7½		57½					57½			3		3	
6	9¾	8½		57¼					57¼					4	
6	10	7		57					57					1	
6	9½	9½		57					57			26	68	94	
6	10	6		56					56	7	35	1	19	62	
6	9½	8½		56					56		35			35	
6	10	5½		55½					55½		18			18	
6	9½	8		55½					55½				15	15	
6	10	5½		55½					55½	52				52	
5	11			55					55		59			59	
6	10	5		55					55	146	73	27	38	284	
6	9½	8		54½					54½				12	12	
6	9½	5		53¾					53¾	53				53	
6	9½	5		52½					52½				17	17	
6	9	7½		52½					52½			1		1	
6	8½	8½		51					51		1			1	
5	10			50					50				43	43	
6	8½	4		46½					46½		1			1	
7	8	8	8	56					56			4		4	
6	8	9		49					49			3		3	
6	8	8	8	48					48		2			2	
6	8	8		48					48		49	60	14	123	
6	8	4		44					44	1	12			13	
5	8			40					40			16		16	
Total										330	568	612	606	2,116	

EMPLOYEES WHO WORKED NIGHT TURNS ONLY

					7	13	13	13	91	91				3	3
					7	12	12	12	84	84		9	12	1	22
					7	11½	11½	11½	80½	80½				1	1
					6	13			72	72		1			1
					6	12	12		72	72			2		2
					6	12		12	72	72	3			41	45
					7	13	10	10	76	76			1		2
					5	10			65	65			2		2
					5	12½			62½	62½	4				4
					6	10			60	60	2	10		43	57
					6	10	10	10	60	60			2		2
					6	10	10		60	60			8	7	15
					5	10		10	60	60		28			28
					5	10			50	50	14	6			19
					5	9			45	45				2	2
					5	8½			42½	42½	1				1

TABLE E (8).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—BAR MILLS—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Day turns					Night turns					Average hours per week	East-ern	Pitts-burgh	Great Lakes and Middle West	South-ern	Total
Turns per week	Hours				Turns per week	Hours									
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week						

EMPLOYEES WHO WORKED NIGHT TURNS ONLY—Continued

-----	-----	-----	-----	-----	7	8	8	8	56	56	-----	-----	2	-----	
-----	-----	-----	-----	-----	6	8	8	8	48	48	-----	8	-----	8	
-----	-----	-----	-----	-----	5	8	-----	8	40	40	-----	6	-----	6	
-----	-----	-----	-----	-----	6	8	-----	8	48	48	-----	5	-----	6	
-----	-----	-----	-----	-----	5	8	-----	8	40	40	-----	-----	-----	-----	
Total	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	9	82	38	98	227

EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER

7	10½	10½	10½	73½	7	13½	13½	13½	94½	84	-----	-----	6	-----	6
7	12	12	12	84	7	12	12	12	84	84	-----	11	6	-----	17
7	12	12	10	82	7	12	6	12	78	80	-----	-----	-----	2	2
7	12	12	11	77	7	12	11	11	77	77	-----	2	-----	-----	2
7	12	12	-----	72	7	12	6	12	78	75	-----	-----	-----	-----	2
6	11½	11½	-----	69	6	12½	12½	-----	75	75	-----	-----	2	-----	2
6	12	12	-----	72	6	12	12	-----	72	72	-----	-----	2	-----	14
6	11	10	-----	65	6	13	-----	13	78	71½	-----	6	-----	-----	6
6	11	11	-----	66	6	12½	-----	12½	75	70½	-----	-----	4	-----	2
6	11	11	-----	66	6	12½	-----	12½	62½	70¼	-----	-----	2	-----	7
6	10	10	12	78	6	10	10	10	70	70	-----	-----	3	-----	4
6	10	10	10	66	6	12	12	-----	72	69	-----	-----	9	-----	9
6	11½	11½	-----	69	6	11½	-----	11½	69	69	-----	8	-----	-----	8
6	10½	10½	12	75	6	12	-----	-----	60	67½	-----	-----	4	-----	4
6	12	12	-----	72	6	12	-----	-----	60	66	-----	5	13	-----	17
6	11	11	-----	66	6	12	-----	11	66	66	-----	-----	12	-----	13
6	12	10	-----	70	6	12	-----	-----	60	65	-----	-----	-----	4	4
6	10	10	10	70	6	10	10	-----	60	65	-----	-----	11	-----	11
6	10	10	-----	60	6	10	10	10	70	65	-----	-----	2	-----	2
6	11½	8½	-----	66	5	12½	-----	-----	62½	64¼	205	-----	-----	-----	205
6	11	8	-----	63	5	13	-----	-----	65	64	-----	-----	15	-----	15
6	11½	8	-----	65½	5	12½	-----	-----	62½	64	-----	-----	95	-----	92
6	12	8	-----	68	5	12	-----	-----	60	64	-----	-----	58	-----	57
6	11½	10½	-----	68	5	12	-----	-----	60	64	-----	-----	1	-----	1
6	11½	10	-----	67½	5	12	-----	-----	60	63¼	-----	-----	1	-----	9
6	12	6	-----	66	5	12	-----	-----	60	63	-----	3	-----	-----	5
6	10½	10½	-----	63	6	10½	-----	10½	63	63	-----	9	-----	-----	8
6	11	10	-----	75	5	12	-----	-----	60	62½	-----	-----	2	-----	1
6	10½	9½	10	72	5	10½	-----	-----	62½	62¼	-----	2	-----	-----	2
6	9½	9½	12	69	5	11	-----	-----	55	62	-----	-----	4	-----	4
6	10½	10½	-----	63	5	12	-----	-----	60	61½	-----	-----	2	-----	2
6	11	-----	-----	65	5	11½	-----	-----	57½	61¼	-----	-----	2	-----	2
6	5	12	-----	60	5	12	-----	-----	60	60	-----	-----	-----	84	84
6	10	-----	-----	60	5	12	-----	-----	60	60	-----	-----	4	-----	4
6	10	10	10	70	5	10	-----	-----	50	60	-----	8	-----	-----	8
6	10	10	-----	60	6	10	-----	10	60	60	-----	383	-----	-----	383
6	10	10	-----	60	6	10	10	-----	60	60	-----	-----	213	195	408
6	10	9	10	69	5	10	-----	-----	50	59½	-----	4	-----	-----	4
6	11	9	-----	64	5	11	-----	-----	55	59½	-----	-----	-----	9	9
6	10	9	-----	59	6	10	-----	10	60	59½	-----	15	-----	-----	132
6	10	8	-----	58	5	12	-----	-----	60	59	-----	-----	132	-----	132
6	10	8½	-----	58½	6	10	-----	8½	58½	58½	-----	-----	3	-----	3
6	10	7½	-----	57½	6	10	-----	8½	58½	58	-----	-----	1	-----	1
6	10	8	-----	58	6	10	-----	8	58	58	-----	-----	7	-----	7
6	10½	5	-----	57½	5	11½	-----	-----	57½	57½	-----	13	-----	-----	13
6	10	7½	-----	57½	6	10	-----	7½	57½	57½	-----	-----	12	-----	12
6	10½	9½	-----	62	5	10½	-----	-----	52½	57¼	-----	8	-----	-----	9
6	9½	9½	-----	57	5	11	-----	-----	55	56	-----	-----	251	-----	251
6	10½	8½	-----	61	5	10	-----	-----	50	55½	-----	-----	-----	2	2
6	10	10	-----	60	5	10	-----	-----	50	55	-----	-----	3	-----	3
6	10	9	-----	59	5	10	-----	-----	50	54½	-----	407	57	-----	464
6	10	8½	-----	58½	5	10	-----	-----	50	54¼	-----	-----	33	-----	33
6	10	8	-----	58	5	10	-----	-----	50	54	-----	59	19	-----	78

TABLE E (8).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—BAR MILLS—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Day turns					Night turns					Average hours per week	East-ern	Pitts-burgh	Great Lakes and Middle West	South-ern	Total
Turns per week	Hours				Turns per week	Hours									
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week						

EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER—Continued

6	9¼	8½		57¼	5	10			50	53½				1	1
6	10	7		57	5	10			50	53½			26		26
6	9¼	5		53¾	5	10½			52½	53½	36				36
6	10	5		55	5	10			50	52½		2			2
6	9½	8		55½	5	9½			47½	51½				2	2
6	9¼	8½		57¼	5	9			45	51½				25	25
6	9¼	8		54¼	5	9			45	49½				4	4
6	8½	8½		51	5	8½			42½	46¾		24		4	24
7	8	8	8	56	7	8	8	8	56	56			26		26
					7	8	8	8	56	56					
6	8	8		48	7	8	8	8	56	56		6	3		9
6	8	8		48	7	8	8	9	57	52½		15			15
6	8	8		48	7	8	8	8	56	52			22		22
7	8	8	8	56	6	6	8	8	48	52		1			1
6	8	8	8	48	7	8	8	8	56	52			2		2
6	8	8		48	7	8	8	8	56	52		60			60
7	8	9	8	57	6	8	8	8	48	51		16			16
					6	8	8	8	48	48					
7	8	8	8	56	6	8	8	8	48	50½			1		1
					7	8	8	8	48	48					
6	8	8		48	7	8	8	8	56	50½		5			5
6	8	9		49	5	10			50	49½			1		1
6	8	8		48	6	8	8	8	48	49½			3		3
6	8	8		48	6	8	8	12	52	49½					
6	8	9		49	6	8	8	9	49	49			2		2
6	8	8		48	6	8	8	9	49	48½		4			4
6	8	9		49	6	8	8	8	48	48½			6		6
					6	8	8	8	48	48					
6	8	8		48	6	8	8	9	49	48½			2		2
					6	8	8	8	48	48					
6	8	9		49	6	8	8	8	48	48½			13		13
					6	8	8	8	48	48					
6	8	8½		48½	6	8	8	8	48	48½		16			16
					6	8	8	8	48	48					
6	8	8	8	48	6	8	8	8	48	48		4			4
					6	8	8	8	48	48					
6	8	8	8	48	6	8	8	8	48	48			1		1
					6	8	8	8	48	48					
6	8	8		48	6	8	8	8	48	48		26			26
					6	8	8	8	48	48					
6	8	8		48	6	8	8	8	48	48		297			297
					6	8	8	8	48	48					
6	8	8		48	6	8	8	8	48	48			43		43
					6	8	8	8	48	48				1	1
6	8	10		50	6	8	8	8	48	46			1		1
					5	8	8	8	40	40					
6	8	9		49	6	8	9		49	46			203		203
					5	8	8		40	40					
6	8	8		48	6	8	8	10	50	46			4		4
					5	8	8		40	40					
6	8	8		48	6	8	9		49	45½			5		5
					5	8	8		40	40					
6	8	8		48	5	8	9		49	45½		18			18
					5	8	8		40	40					
6	8	8		48	6	8	8	8	48	45½		356	3		359
					6	8	8	8	48	48					
6	8	8		48	6	8	8		45½	45½			1		1

TABLE E (8).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—BAR MILLS—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district					
Turns per week	Day turns				Turns per week	Night turns				Average hours per week	East-ern	Pitts-burgh	Great Lakes and Middle West	South-ern	Total
	Hours					Hours									
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week						
6	8	10	-----	50	5	8	-----	40	45	-----	-----	21	-----	21	
6	8	9	-----	49	5	8	-----	40	44½	-----	-----	4	-----	4	
6	8	8	-----	48	5	8	-----	40	44	-----	-----	101	-----	101	
6	8	8	-----	48	5	8	-----	40	42½	-----	257	-----	-----	257	
6	8	7	-----	47	5	8	-----	40	42½	33	-----	-----	-----	33	
6	8	6	-----	46	5	8	-----	40	42	64	-----	-----	-----	64	
Total	-----	-----	-----	-----	-----	-----	-----	-----	-----	365	2,036	1,485	335	4,221	

EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER—Continued

6	8	10	-----	50	5	8	-----	40	45	-----	-----	21	-----	21
6	8	9	-----	49	5	8	-----	40	44½	-----	-----	4	-----	4
6	8	8	-----	48	5	8	-----	40	44	-----	-----	101	-----	101
6	8	8	-----	48	5	8	-----	40	42½	-----	257	-----	-----	257
6	8	7	-----	47	5	8	-----	40	42½	33	-----	-----	-----	33
6	8	6	-----	46	5	8	-----	40	42	64	-----	-----	-----	64
Total	-----	-----	-----	-----	-----	-----	-----	-----	-----	365	2,036	1,485	335	4,221

Of the total number of bar mill employees reported, 2,883, or 44 per cent, worked 10 hours per day; 1,830, or 28 per cent, worked 8 hours per day; and 1,161, or 18 per cent, worked 12 hours. Very little 7-day work was reported in this department, only 127, or 2 per cent, of all employees working 7 days per week all the time and 170, or 3 per cent, a part of the time. The basic figures are set forth by districts in the following table. A few minor groupings do not appear in this summary.

In preparing the summary, only the regular hours per turn an employee worked on Monday to Friday are considered regardless of the length of his turn on Saturday and Sunday.

SUMMARY OF PRINCIPAL GROUPS IN TABLE E (8)

Item	Number of employees who worked specified days and hours					Per cent of total
	East-ern district	Pitts-burgh district	Great Lakes and Middle West district	South-ern district	Total	
Total employees in bar mills	704	2,686	2,135	1,039	6,564	100
Employees who worked—						
7-day week all the time		30	72	25	127	2
7-day week part of the time		117	51	2	170	3
12 or more hours per day	241	50	635	235	1,161	18
7-day week and 12 or more hours per day all the time		23	29	8	60	1
7-day week and 12 or more hours per day part of the time				2	2	(¹)
10 hours per day	222	1,297	782	582	2,883	44
7-day week and 10 hours per day all the time		5	9	16	30	(¹)
7-day week and 10 hours per day part of the time		12	13	25	25	(¹)
8 hours per day	98	1,163	554	15	1,830	28
7-day week and 8 hours per day all the time			32	-----	32	(¹)
7-day week and 8 hours per day part of the time		103	28	-----	131	2

¹ Less than 1 per cent.

SHEET MILLS

Data for 1924 were collected from the pay rolls of 14 sheet mills and cover 9,690 employees in all occupations. Of the 9,690 employees reported, 5,696 are found in the principal productive occupations for which separate figures are given. Data were first obtained for this department in 1910, and comparative figures are presented for the period 1910 to 1924.¹

Considering the principal productive occupations as a whole, average full-time hours per week in 1924 were practically the same as in 1922 and 1913, 2 per cent lower than in 1910 and 3 per cent lower than in 1917—the highest point of customary working-time in this department.

The study shows there was a large increase in earnings per hour in 1924 as compared with any other year for which data are presented except 1917, 1919, and 1920. Hourly earnings in those years were unusually high and were from 5 to 35 per cent greater in the principal productive occupations combined than in 1924. The hourly earnings in 1924, however, were 15 per cent above those in 1922 and 70 per cent above those in 1913; in other words, nearly $1\frac{3}{4}$ times the hourly earnings of 1913.

Average full-time earnings per week followed very closely the course of average hourly earnings, as the variations in average full-time hours per week were very slight as compared with the changes in hourly earnings.

The most significant facts concerning average earnings and average hours in each of the principal productive occupations in sheet mills are shown in Table A (9). Comparative figures are presented for 13 of the occupations for the years 1910 to 1924, the other four having been added at different times during that period. The custom of level-handed work (two employees dividing the work and pay of one or more occupations evenly) has been increasing in practice since the bureau first made a study of this industry. Sheet heaters, level-handed, were included in the bureau's reports for 1913. In 1920, rollers, level-handed, were also added. However, not all of the level-handed work in the principal productive occupations has been included, as there are many working combinations which are of local interest only and not general to the industry. As hot-mill crews in sheet mills work in 8-hour shifts, three shifts per day, and usually either 5 days, 5 days, and 6 days, or 5 days, 6 days, and 6 days per week in rotation, the average full-time hours per week of employees in the principal productive occupations in this department have been subject to but slight variations, since the large majority of the employees were hot-mill workers.

Average earnings per hour increased in each of the 17 principal productive occupations in 1924 as compared with 1922 and all other years except 1917, 1919, and 1920. The 1919 and 1920 figures are higher in each occupation than those in 1924, and the averages in 1917 are greater in some occupations but lower in others. For example, in 1910 the average of hourly earnings for laborers was 16.4

¹ No data were collected for the years 1916, 1918, 1921, and 1923.

as compared with 19 cents in 1913, 33.1 in 1917, 46.2 in 1919, and 53.6 in 1920. In 1922 the average dropped to 35.6 cents but was increased in 1924 to 42 cents. Table A (9) shows like figures for the other occupations as well.

The movement in full-time earnings per week in each occupation was approximately the same as in hourly earnings as the variations in full-time hours were very slight as compared with the fluctuation in earnings per hour.

In 14 of the 17 principal productive occupations the employees in 1924 all customarily worked 48 hours per week or less, and in 11 of those 14 occupations the full-time hours were never more than 48 per week in any year from 1910 to 1924. No 84-hour week has been reported in any principal productive occupation since 1915.

Index numbers for full-time hours per week, earnings per hour, and full-time weekly earnings are also contained in Table A (9). These are simply percentages computed from the averages presented in the table, using the average for 1913 as the base or 100 per cent. The index numbers for this department as a whole (all principal productive occupations combined) are shown on page 5.

TABLE A (9).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—SHEET MILLS

[For explanation of this table see p. 13]

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—					
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84	
Pair heaters:														
1910.....	9	210	42.7	\$0.466	\$19.89	100	86	86	100					
1911.....	9	255	42.7	.502	21.42	100	92	92	100					
1912.....	9	249	42.7	.517	22.06	100	95	95	100					
1913.....	13	336	42.8	.543	23.23	100	100	100	100					
1914.....	15	399	42.8	.540	23.10	100	99	99	100					
1915.....	15	364	42.8	.518	22.17	100	95	95	100					
1917.....	8	276	43.7	1.038	45.48	102	191	195	100					
1919.....	11	382	43.4	1.046	45.40	101	193	195	100					
1920.....	13	521	43.4	1.386	60.13	101	265	259	100					
1922.....	14	576	43.3	.880	37.84	101	162	163	100					
1924.....	14	536	43.4	1.027	44.50	101	189	192	100					
Rollers:														
1910.....	9	215	42.7	1.242	52.98	100	84	84	100					
1911.....	9	259	42.7	1.380	58.89	100	93	93	100					
1912.....	9	262	42.7	1.416	60.41	100	96	96	100					
1913.....	13	335	42.8	1.476	63.21	100	100	100	100					
1914.....	15	394	42.8	1.431	61.20	100	97	97	100					
1915.....	15	348	42.9	1.280	54.80	100	87	87	100					
1917.....	8	276	43.7	2.591	113.47	102	175	180	100					
1919.....	11	342	43.5	2.536	110.32	102	172	175	100					
1920.....	13	464	43.4	2.976	129.10	101	202	204	100					
1922.....	14	501	43.3	1.895	82.01	101	128	130	100					
1924.....	14	478	43.4	2.148	93.35	101	146	148	100					
Rollers, level handed:														
1920.....	5	44	42.7	1.516	64.73				100					
1922.....	3	39	44.5	1.069	42.57				100					
1924.....	7	114	42.9	1.345	57.69				100					

TABLE A (9).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—SHEET MILLS—Continued

Occupation and year	Number of plants	Number of employ-ees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—									
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84					
Rollers' helpers or finishers:																		
1912.....	6	115	42.7	\$0.474	\$20.21	100	94	94	100	.....	.....	.....	.....	.....
1913.....	8	171	42.7	.503	21.48	100	100	100	100	.....	.....	.....	.....	.....
1914.....	10	264	42.9	.555	23.77	100	110	111	100	.....	.....	.....	.....	.....
1915.....	10	233	42.9	.461	19.77	100	92	92	100	.....	.....	.....	.....	.....
1919.....	10	271	43.0	1.010	43.43	101	201	202	100	.....	.....	.....	.....	.....
1920.....	11	437	42.8	1.092	46.80	100	217	218	100	.....	.....	.....	.....	.....
1922.....	11	487	42.9	.721	30.90	100	143	144	100	.....	.....	.....	.....	.....
1924.....	11	437	43.0	.865	37.78	101	172	174	100	.....	.....	.....	.....	.....
Roughers:																		
1910.....	9	215	42.7	.558	23.82	100	87	87	100	.....	.....	.....	.....	.....
1911.....	9	255	42.7	.603	25.71	100	94	94	100	.....	.....	.....	.....	.....
1912.....	9	252	42.7	.616	26.29	100	96	96	100	.....	.....	.....	.....	.....
1913.....	13	336	42.8	.642	27.49	100	100	100	100	.....	.....	.....	.....	.....
1914.....	15	399	42.8	.648	27.73	100	101	101	100	.....	.....	.....	.....	.....
1915.....	15	353	42.8	.619	26.51	100	96	96	100	.....	.....	.....	.....	.....
1917.....	8	276	43.7	1.285	56.27	102	200	205	100	.....	.....	.....	.....	.....
1919.....	11	367	43.5	1.289	56.07	102	201	204	100	.....	.....	.....	.....	.....
1920.....	13	528	43.4	1.584	68.69	101	247	250	100	.....	.....	.....	.....	.....
1922.....	14	590	43.3	.994	42.83	101	155	156	100	.....	.....	.....	.....	.....
1924.....	14	533	43.4	1.150	49.94	101	179	182	100	.....	.....	.....	.....	.....
Catchers:																		
1910.....	9	215	42.7	.544	23.19	100	87	86	100	.....	.....	.....	.....	.....
1911.....	9	258	42.7	.587	25.03	100	93	93	100	.....	.....	.....	.....	.....
1912.....	9	252	42.7	.603	25.71	100	96	96	100	.....	.....	.....	.....	.....
1913.....	13	336	42.8	.629	26.92	100	100	100	100	.....	.....	.....	.....	.....
1914.....	15	399	42.8	.636	27.23	100	101	101	100	.....	.....	.....	.....	.....
1915.....	15	350	42.8	.595	25.49	100	95	95	100	.....	.....	.....	.....	.....
1917.....	8	276	43.7	1.256	54.92	102	200	204	100	.....	.....	.....	.....	.....
1919.....	11	407	43.6	1.199	52.28	102	191	194	100	.....	.....	.....	.....	.....
1920.....	13	552	43.4	1.533	66.43	101	244	247	100	.....	.....	.....	.....	.....
1922.....	14	589	43.3	.961	41.54	101	153	154	100	.....	.....	.....	.....	.....
1924.....	14	570	43.4	1.099	47.70	101	175	177	100	.....	.....	.....	.....	.....
Matchers:																		
1910.....	9	210	42.7	.387	16.53	100	86	86	100	.....	.....	.....	.....	.....
1911.....	9	255	42.7	.418	17.83	100	93	93	100	.....	.....	.....	.....	.....
1912.....	9	249	42.7	.429	18.30	100	96	96	100	.....	.....	.....	.....	.....
1913.....	13	336	42.8	.448	19.16	100	100	100	100	.....	.....	.....	.....	.....
1914.....	15	399	42.8	.484	20.70	100	108	108	100	.....	.....	.....	.....	.....
1915.....	15	354	42.8	.475	20.34	100	106	106	100	.....	.....	.....	.....	.....
1917.....	8	276	43.7	.946	41.39	102	211	216	100	.....	.....	.....	.....	.....
1919.....	11	398	43.5	.981	42.67	102	219	223	100	.....	.....	.....	.....	.....
1920.....	13	642	43.4	1.225	53.12	101	273	277	100	.....	.....	.....	.....	.....
1922.....	14	743	43.3	.791	34.04	101	177	178	100	.....	.....	.....	.....	.....
1924.....	14	639	43.4	.932	40.42	101	208	211	100	.....	.....	.....	.....	.....
Doblars:																		
1910.....	9	210	42.7	.372	15.86	100	87	86	100	.....	.....	.....	.....	.....
1911.....	9	252	42.7	.401	17.10	100	93	93	100	.....	.....	.....	.....	.....
1912.....	9	246	42.7	.412	17.53	100	96	96	100	.....	.....	.....	.....	.....
1913.....	13	336	42.8	.429	18.34	100	100	100	100	.....	.....	.....	.....	.....
1914.....	15	399	42.8	.462	19.75	100	108	108	100	.....	.....	.....	.....	.....
1915.....	15	354	42.8	.453	19.42	100	106	106	100	.....	.....	.....	.....	.....
1917.....	9	276	43.7	.906	39.57	102	211	216	100	.....	.....	.....	.....	.....
1919.....	11	437	43.4	.921	39.97	101	215	218	100	.....	.....	.....	.....	.....
1920.....	13	658	43.4	1.206	52.32	101	281	285	100	.....	.....	.....	.....	.....
1922.....	14	731	43.3	.775	33.42	101	181	182	100	.....	.....	.....	.....	.....
1924.....	14	661	43.4	.909	39.42	101	212	215	100	.....	.....	.....	.....	.....
Sheet heaters:																		
1910.....	9	215	42.7	.883	37.68	100	89	89	100	.....	.....	.....	.....	.....
1911.....	9	259	42.7	.911	38.88	100	92	91	100	.....	.....	.....	.....	.....
1912.....	9	253	42.7	.949	40.51	100	96	95	100	.....	.....	.....	.....	.....
1913.....	12	307	42.8	.993	42.50	100	100	100	100	.....	.....	.....	.....	.....
1914.....	14	364	42.8	.966	41.34	100	97	97	100	.....	.....	.....	.....	.....
1915.....	14	324	42.9	.868	37.19	100	87	88	100	.....	.....	.....	.....	.....
1917.....	8	276	43.7	1.879	82.36	102	189	194	100	.....	.....	.....	.....	.....
1919.....	11	332	43.5	1.849	80.43	102	186	189	100	.....	.....	.....	.....	.....
1920.....	13	424	43.4	2.151	93.29	101	217	220	100	.....	.....	.....	.....	.....
1922.....	14	499	43.3	1.381	59.26	101	139	139	100	.....	.....	.....	.....	.....
1924.....	14	470	43.4	1.559	67.68	101	157	159	100	.....	.....	.....	.....	.....

TABLE A (9).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS, PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—SHEET MILLS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were—					
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under 60	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84	
Sheet heaters, level handed:														
1910	2	14	42.7	\$0.707	\$30.17	100	100	100	100					
1911	2	56	42.7	.762	32.65	100	108	108	100					
1912	2	34	42.7	.686	29.27	100	97	97	100					
1913	3	15	42.7	1.316	56.19	100	186	186	100					
1914	3	94	43.0	1.661	71.45	101	235	237	100					
1915	7	90	43.3	.995	41.33	101	141	137	100					
1916	7	115	42.9	1.088	46.29	100	154	153	100					
Sheet heaters' helpers:														
1910	8	174	42.7	.377	16.07	100	78	78	100					
1911	8	215	42.7	.436	18.59	100	90	90	100					
1912	8	208	42.7	.439	18.71	100	91	90	100					
1913	10	230	42.9	.483	20.70	100	100	100	100					
1914	13	309	42.8	.485	20.73	100	100	100	100					
1915	13	375	42.9	.458	19.60	100	95	95	100					
1916	6	216	43.2	.859	37.21	101	177	180	100					
1917	11	286	43.1	.926	39.31	100	192	193	100					
1918	12	367	42.7	1.140	48.68	100	236	235	100					
1919	13	454	42.8	.727	31.13	100	151	150	100					
1920	13	454	42.8	.727	31.13	100	151	150	100					
1921	13	408	42.9	.894	38.51	100	185	186	100					
Shearmen:														
1910	7	85	46.0	.689	30.79	107	85	88	86			14		
1911	7	104	44.9	.722	32.86	105	89	94	90			10		
1912	7	105	44.9	.768	34.67	105	94	99	90			10		
1913	8	114	42.9	.814	34.90	100	100	100	100					
1914	10	136	42.9	.860	36.84	100	106	106	100					
1915	10	115	43.0	.827	35.48	100	102	102	100					
1916	7	149	43.5	1.399	60.90	101	172	175	100					
1917	11	221	43.3	1.463	63.35	101	180	182	100					
1918	8	122	43.5	1.891	82.22	101	232	236	100					
1919	12	190	43.3	1.175	50.90	101	144	146	100					
1920	12	265	43.4	.642	27.69	101	256	257	100					
1921	8	283	43.8	.736	32.11	102	293	298	100					
Shearmen's helpers:														
1910	6	62	46.4	.261	11.90	108	104	111	84			16		
1911	6	83	44.9	.308	13.59	105	123	126	90			10		
1912	6	77	45.1	.290	12.88	105	116	120	90			10		
1913	7	111	42.9	.251	10.77	100	100	100	100					
1914	9	128	42.9	.282	12.09	100	112	112	100					
1915	9	146	43.8	.242	10.59	102	96	98	95	2		3		
1916	6	120	43.2	.533	23.06	101	220	214	100					
1917	11	196	43.7	.682	29.80	102	272	277	98			2		
1918	7	155	43.7	.983	42.91	102	392	398	100					
1919	12	265	43.4	.642	27.69	101	256	257	100					
1920	8	283	43.8	.736	32.11	102	293	298	100					
Openers:														
1910	7	138	46.0	.274	12.57	101	98	100	86			14		
1911	7	167	45.2	.275	12.35	100	99	98	89			11		
1912	7	180	45.8	.289	13.04	101	104	104	87			13		
1913	6	168	45.4	.279	12.56	100	100	100	88			12		
1914	9	200	42.8	.282	12.06	94	101	96	100					
1915	9	180	43.6	.273	11.93	96	98	95	96	2		2		
1916	6	175	43.3	.662	28.70	95	237	229	100					
1917	10	266	43.6	.656	28.60	96	235	228	99			1		
1918	6	198	44.0	1.188	52.13	97	426	415	100					
1919	11	415	43.5	.732	31.27	96	262	249	100					
1920	9	284	43.5	.806	34.99	96	289	279	100					
Pickers:														
1910	4	50	70.8	.181	12.75	104	84	88			10		90	
1911	5	58	71.2	.177	12.54	105	82	87				9	16	69
1912	5	39	71.7	.186	13.23	103	86	91			13	15	56	
1913	8	71	68.1	.216	14.49	100	100	100			11	7	8	73
1914	9	121	69.6	.211	14.55	102	98	100			7	4	8	81
1915	9	126	69.8	.209	14.44	102	97	100			6	3	6	84
1916	7	67	68.3	.600	40.98	100	278	283			6	24		70
1917	7	65	51.5	.792	41.13	76	367	284			77	5	17	2
1918	11	106	65.9	.508	33.51	97	235	231			8	8	7	42
1919	12	150	63.6	.555	35.48	93	257	245			7	13	31	25

TABLE A (9).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—*SHEET MILLS*—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index numbers (1913=100)			Per cent of employees whose average full-time hours per week were —									
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	60	Over 60 and under 72	72	Over 72 and under 84	84			
Feeders:																		
1920.....	5	41	56.8	\$0.704	\$39.39				41									
1922.....	8	119	61.4	.500	30.64				32	7	10	30	9	12				
1924.....	8	101	53.1	.578	30.72				59	9	2	3	27					
Laborers:																		
1910.....	9	347	63.1	.164	10.35	97	86	84		4	64	13	16	1	3			
1911.....	9	361	63.6	.166	10.54	98	87	86		5	53	25	16		2			
1912.....	9	354	63.5	.169	10.72	98	89	87		4	54	26	15	1				
1913.....	13	351	64.9	.190	12.28	100	100	100		17	37	13	28	4	1			
1914.....	15	378	65.9	.188	12.37	102	99	101		10	26	32	26	3	2			
1915.....	15	394	65.0	.188	12.21	100	99	99		10	32	30	18	8	1			
1917.....	8	656	61.8	.331	20.46	95	174	167			73	26	2					
1919.....	9	270	64.5	.462	29.80	99	243	243		8	51	13	28					
1920.....	11	866	59.5	.536	32.01	92	282	261	32	10	20	11	22	5				
1922.....	13	808	65.2	.356	23.06	100	187	188		29	31	8	32					
1924.....	13	757	64.6	.420	27.15	100	221	221	3	20	34	13	30					

The customary working time per week of all employees covered in the sheet mills in each of the 5 years, 1914, 1915, 1920, 1922, and 1924,² has been classified, and the number and per cent of employees coming under each classification are shown in Table B (9).

In all of the plants covered in the sheet mills the regular turn employees, comprising a large percentage of all employees scheduled, were divided into three crews, each working 8 hours per turn. The employees shown under the head "5 days, 5 days, and 6 days in rotation" worked 5 turns per week, Monday to Friday, inclusive, with one crew working an extra turn Saturday morning. Each crew advances one turn each week, thus giving to each the extra Saturday turn every third week. Those working 5 days, 6 days, and 6 days in rotation follow the same plan except that two turns are worked on Saturday instead of one.

In 1924, 47 per cent of the 9,690 employees covered worked 5 days, 5 days, and 6 days per week in rotation; 15 per cent worked 5 days, 6 days, and 6 days, and 30 per cent worked 6 days per week. The working time of employees in this department has been subject to but few changes during the past several years, and scarcely any change is noticed in the various percentages as compared with previous years.

² These 5 years are the only ones in which data were collected covering all principal productive and other occupations.

TABLE B (9).—NUMBER AND PER CENT OF EMPLOYEES WHO CUSTOMARILY WORKED EACH SPECIFIED NUMBER OF DAYS PER WEEK, 1914 TO 1924, BY DISTRICT AND YEAR—SHEET MILLS

[For explanation of this table see p. 13]

District and year	Number of plants	Number of employees	Number of employees whose customary working-days per week were—						Per cent of employees whose customary working-days per week were—							
			5	5 and 6 alternately	5, 5, and 6 in rotation	5, 6, and 6 in rotation	6	6 and 7 alternately	7	5	5 and 6 alternately	5, 5, and 6 in rotation	5, 6, and 6 in rotation	6	6 and 7 alternately	7
Pittsburgh:																
1914	10	4, 150	3	110	2, 521	1, 282	234	(1)	3	61	31	31	31	31	31	6
1915	10	3, 908	20	144	2, 179	1, 208	237	1	4	57	32	32	32	32	32	6
1920	9	5, 410	40	193	2, 483	1, 669	68	1	4	46	16	31	31	31	31	2
1922	9	5, 798	120	97	2, 674	377	1, 732	34	2	46	15	30	30	30	30	5
1924	9	5, 787	64	253	2, 713	862	1, 697	20	4	47	15	29	(1)	(1)	(1)	3
Great Lakes and Middle West:																
1914	5	2, 154	12	9	1, 144	216	705	57	11	53	10	33	33	33	33	1
1915	5	1, 928	12	6	994	252	625	31	8	52	12	32	32	32	32	1
1920	4	3, 328	12	51	1, 342	519	1, 252	152	(1)	2	40	16	38	38	(1)	5
1922	5	3, 863	33	143	1, 670	552	1, 261	38	1	43	14	33	33	33	33	4
1924	5	3, 903	1	90	1, 798	575	1, 242	26	2	46	15	32	32	32	32	4
Total:																
1914	15	6, 304	15	119	3, 665	216	1, 987	57	245	(1)	2	58	3	32	1	4
1915	15	5, 736	32	150	3, 173	252	1, 833	51	245	1	3	55	4	32	1	4
1920	13	8, 788	52	244	3, 825	1, 366	2, 921	68	262	1	3	44	16	33	1	3
1922	14	9, 681	153	240	4, 344	1, 429	2, 993	72	430 ^b	(1)	2	45	15	31	1	4
1924	14	9, 690	65	348	4, 511	1, 437	2, 939	46	349	1	4	47	15	80	(1)	4

¹ Less than 1 per cent.

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Table C (9) presents the most significant facts relative to earnings and hours of labor of employees in the principal productive occupations in the 14 sheet mills covered in 1924. The occupations have been arranged as nearly as possible in the order of production, and figures are shown for each of the two districts separately and both districts combined for each occupation.

Referring to the first occupation presented, pair heaters, the 431 positions were kept filled by a total of 536 men during the pay period scheduled. As stated in the explanation of this table, on page 14, many of the employees worked only part time in this occupation, and 536 men were necessary to keep the 431 positions filled. However, it must not be assumed that these employees worked only as pair heaters during the period. Many of them worked in other occupations, and the number of employees shown in the separate occupations in the following table can not be combined as the number of employees who worked in the principal productive occupations in this department.

The average customary full time of the 536 men working in the 431 positions was 5.4 turns per week, 8 hours per turn, and 43.4 hours per week. While these averages are for both districts combined, the turns per week, hours per turn, and hours per week of employees are approximately the same in each district.

In the distribution of the customary working time of the 536 employees, 387, or 72 per cent, when working full time worked 44 hours per week or less, while the remaining 149, or 28 per cent, worked between 44 and 48 hours.

The average hourly earnings of pair heaters ranged from \$1.001 in the Great Lakes and Middle West district to \$1.048 in the Pittsburgh district, with an average of \$1.027 for both districts combined. Average earnings for the half month period reached the high point in the Pittsburgh district, \$72.67, and employees in that district also worked slightly more hours at this occupation than those in the Great Lakes and Middle West district, or an average of 69.3 hours. These averages are only for the occupation under consideration, and do not include earnings that employees may have made in other occupations during the same pay period.

The average of full-time earnings per week of pair heaters was \$43.44 in the Great Lakes and Middle West district and \$45.38 in the Pittsburgh district. The average for both districts was \$44.50.

TABLE C (9).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND DISTRICT—*SHEET MILLS*

[See explanation on p. 3 of adjustment of time work and earnings received]

Occupation and district	Number of plants	Positions				Employees working in scheduled pay period (16 days) at specified occupation											Average full-time earnings per week			
		Number	Average customary full-time of employees in the positions			Number	Number whose customary full-time hours per week were—								Average hours worked	Average earnings in pay period		Average earnings per hour		
			Turns per week	Hours per turn	Hours per week		44 and under	Over 44 and under 48	48	Over 48 and under 56	56 and under 60	60	Over 60 and under 72	72					Over 72 and under 84	
Pair heaters:																				
Pittsburgh	9	252	5.4	8.0	43.3	293	215	78									69.3	\$72.67	\$1.048	\$45.38
Great Lakes and Middle West	5	179	5.2	8.0	43.4	243	172	71									69.0	69.06	1.001	43.44
Total	14	431	5.4	8.0	43.4	536	387	149									69.2	71.03	1.027	44.50
Rollers:																				
Pittsburgh	9	245	5.4	8.0	43.4	275	206	69									71.4	155.85	2.182	94.70
Great Lakes and Middle West	5	155	5.4	8.0	43.5	203	143	60									73.4	154.45	2.104	91.52
Total	14	400	5.4	8.0	43.4	478	349	129									72.3	155.25	2.148	93.35
Rollers, level handed:																				
Pittsburgh	3	8	5.3	8.0	42.7	15	15										41.6	60.53	1.455	62.13
Great Lakes and Middle West	4	46	5.4	8.0	42.9	99	89	10									43.7	58.13	1.329	57.01
Total	7	54	5.4	8.0	42.9	114	104	10									43.5	58.44	1.345	57.69
Rollers' helpers or finishers:																				
Pittsburgh	7	168	5.3	8.0	42.7	222	222										54.8	48.42	.883	37.70
Great Lakes and Middle West	4	158	5.4	8.1	43.4	215	141	74									66.3	56.33	.849	36.85
Total	11	326	5.4	8.0	43.0	437	363	74									60.5	52.31	.865	37.28
Roughers:																				
Pittsburgh	9	247	5.4	8.0	43.3	298	223	75									66.9	80.56	1.203	52.09
Great Lakes and Middle West	5	180	5.4	8.0	43.4	235	169	66									72.9	79.36	1.088	47.22
Total	14	427	5.4	8.0	43.4	533	392	141									69.6	80.03	1.150	49.94

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TABLE C (9).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND DISTRICT—*SHEET MILLS*—Continued

Occupation and district	Number of plants	Positions			Employees working in scheduled pay period (16 days) at specified occupation											Average full-time earnings per week				
		Number	Average customary full-time of employees in the positions			Number	Number whose customary full-time hours per week were—								Average hours worked		Average earnings in pay period	Average earnings per hour		
			Turns per week	Hours per turn	Hours per week		44 and under	Over 44 and under 48	48	Over 48 and under 56	56 and under 60	60	Over 60 and under 72	72					Over 72 and under 84	
Catchers:																				
Pittsburgh	9	248	5.4	8.0	43.3	322	236	86									62.5	\$70.25	\$1.124	\$48.67
Great Lakes and Middle West	5	180	5.4	8.0	43.4	248	175	73									68.7	73.53	1.070	46.44
Total	14	428	5.4	8.0	43.4	570	411	159									65.2	71.67	1.069	47.70
Matchers:																				
Pittsburgh	9	246	5.4	8.0	43.3	356	240	116									55.7	52.67	.945	40.92
Great Lakes and Middle West	5	183	5.4	8.0	43.4	283	198	85									61.2	56.09	.917	39.80
Total	14	429	5.4	8.0	43.4	639	438	201									58.2	54.18	.982	40.42
Doublers:																				
Pittsburgh	9	246	5.4	8.0	43.3	361	259	102									55.5	51.21	.923	39.97
Great Lakes and Middle West	5	184	5.4	8.0	43.4	300	212	88									58.2	51.93	.893	38.76
Total	14	430	5.4	8.0	43.4	661	471	190									56.7	51.54	.909	39.43
Sheet heaters:																				
Pittsburgh	9	236	5.4	8.0	43.4	268	197	71									71.0	111.57	1.572	68.22
Great Lakes and Middle West	5	162	5.4	8.0	43.4	202	148	54									77.4	119.38	1.543	66.97
Total	14	398	5.4	8.0	43.4	470	345	125									73.7	114.93	1.559	67.68
Sheet heaters, level handed:																				
Pittsburgh	5	15	5.3	8.0	42.7	38	38										53.7	62.41	1.163	49.66
Great Lakes and Middle West	2	32	5.4	8.0	43.0	77	69	8									39.0	40.43	1.038	44.63
Total	7	47	5.4	8.0	42.9	115	107	8									43.8	47.69	1.088	46.29

Table D (9) shows the number of employees and the average and classified earnings per hour of rollers and matchers in 1924 for each of the two districts separately and both districts combined. These two occupations are selected as representative of the spread or variation in hourly earnings within the occupations in this department.

The average of hourly earnings for rollers in both districts combined was \$2.148 and for matchers 93.2 cents. The range of earnings was from 68 cents to \$3.25 per hour for rollers and from 40 cents to \$2 for matchers.

TABLE D (9).—AVERAGE AND CLASSIFIED EARNINGS PER HOUR IN TWO SELECTED OCCUPATIONS, 1924, BY DISTRICT—*SHEET MILLS*

[For explanation of this table see p. 15]

Occupation and district	Number of employees	Average earnings per hour	Number of employees whose earnings per hour were—									
			80 and under 90 cts.	\$1 and under \$1.25	\$1.25 and under \$1.50	\$1.50 and under \$1.75	\$1.75 and under \$2	\$2 and under \$2.25	\$2.25 and under \$2.50	\$2.50 and under \$2.75	\$2.75 and under \$3	\$3 and under \$3.25
			ROLLERS									
Pittsburgh.....	275	\$2.182	1	1	9	18	69	76	61	29	10	2
Great Lakes and Middle West.....	203	2.104	1	1	5	20	49	64	32	25	5	2
Total.....	478	2.148	2	2	14	38	118	137	96	54	15	2

MATCHERS	Number of employees	Average earnings per hour	Number of employees whose earnings per hour were—										
			40 and under 50 cents	50 and under 60 cents	60 and under 70 cents	70 and under 80 cents	80 and under 90 cents	90 cents and under \$1	\$1 and under \$1.10	\$1.10 and under \$1.25	\$1.25 and under \$1.35	\$1.35 and under \$1.50	\$1.50 and under \$2
			ROLLERS										
Pittsburgh.....	356	\$0.945	4	11	16	47	86	83	63	36	4	5	1
Great Lakes and Middle West.....	283	.917	1	8	14	34	75	81	50	15	4	1	-----
Total.....	639	.932	5	19	30	81	161	164	113	51	8	6	1

¹ One at 68 cents

The customary turns per week and hours per turn and per week, together with the average full-time hours per week, of employees in the sheet mills are shown in detail, by district and all districts combined, for the year 1924, in Table E (9). The information was obtained from 14 plants and covers 9,690 employees in all occupations.

The table shows the customary number of day turns and night turns per week and the corresponding hours for each turn for each day of the week as well as the full-time hours per week. Employees are divided into three groups, as follows: (a) Those who work days only, (b) those who work nights only, and (c) those who alternate or rotate weekly from one shift to another. The order of arrangement begins with the highest average full-time hours per week.

Gas or repair turns have been disregarded when employees customarily work such turns at less frequent intervals than once every three weeks on a 3-turn basis or once every four weeks on a 2-turn

basis. In a few instances relief systems have also been omitted where the periods elapsing between reliefs were longer than three or four weeks.

In some instances in the table hours are reported for 7 days, yet the number of days worked is given as 6. This is owing to the fact that it is a 7-day occupation wherein each employee was relieved 1 day in 7 with no information available, however, as to which day; therefore, the hours for all days have been shown and the relief indicated in the full-time hours per week.

In the main the table is believed to be clear, but some points may need explanation. The first line of the table shows that in the plants canvassed 1 man in the Pittsburgh district was found on a day job requiring him to work 7 days per week and 13½ hours per day—a total of 94½ hours per week.

In the third section of the table the first line shows that 14 men in the Great Lakes and Middle West district alternated from 7 turns of 11 hours on day work to 7 turns of 13 hours on night work, averaging 84 hours per week. The bracketed third and fourth lines of this section show 22 men in the Great Lakes and Middle West district going from 6 day turns of 12 hours to 7 night turns of 12 hours, followed by 7 day turns of 12 hours and then 7 night turns of 12 hours, making an average of 81 hours of labor per week.

When there are three eight-hour turns the second and third are tabulated as night turns.

TABLE E (9).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—SHEET MILLS

[For explanation of this table see p. 15]

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district			
Day turns					Night turns					Average hours per week	Pittsburgh	Great Lakes and Middle West	Total
Turns per week	Hours				Turns per week	Hours							
	Monday to Friday	Saturday	Sunday	Per week		Monday to Friday	Saturday	Sunday	Per week				

EMPLOYEES WHO WORKED DAY TURNS ONLY

7	13½	13½	13½	94½						94½	1		1
7	12	12	12	84						84	2	4	6
7	11	11	11	77						77	3		3
7	10½	10½	10½	73½						73½		1	1
6	12	12	12	72						72		2	2
6	12	12		72						72	26	57	83
6	12	11		71						71		1	1
7	10	10	10	70						70	47	9	56
6	11½	11½		69						69	1		1
6	12	12	8	68						68		1	1
7	10	9	9	68						68	58		58
7	10	9	8	67						67	1		1
6	11	11		66						66	3	2	5
6	11½	7½		65						65	1		1
7	10	10	5	65						65	8		8
6	11½	6½		64						64	1		1
6	11½	6		63½						63½		25	25
6	10½	10½		63						63		2	2
7	9	9	9	63						63	1	4	5
6	10	11		61						61	1		1

TABLE E (9).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—SHEET MILLS—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district			
Day turns					Night turns					Average hours per week	Pittsburgh	Great Lakes and Middle West	Total
Turns per week	Hours				Turns per week	Hours							
	Monday to Friday	Saturday	Sunday	Per week		Monday to Friday	Saturday	Sunday	Per week				

EMPLOYEES WHO WORKED DAY TURNS ONLY—Continued

6	11	5	---	60	---	---	---	---	60	---	1	1
6	10	10	---	60	---	---	---	---	60	230	400	630
6	10	9	---	59	---	---	---	---	59	421	1	422
6	10½	6	---	58½	---	---	---	---	58½	---	1	1
6	10	8	---	58	---	---	---	---	58	131	---	131
6	10½	5	---	57½	---	---	---	---	57½	1	13	14
6	9½	9	---	56½	---	---	---	---	56½	3	---	3
6	10	6	---	56	---	---	---	---	56	1	---	1
6	10	5½	---	55½	---	---	---	---	55½	1	---	1
6	10	4	---	54	---	---	---	---	54	4	---	4
6	9	9	---	54	---	---	---	---	54	7	8	15
6	9	8	---	53	---	---	---	---	53	42	---	42
5	10	---	---	50	---	---	---	---	50	4	---	4
7	8	8	8	56	---	---	---	---	56	---	3	3
6	8	8	---	48	---	---	---	---	48	18	8	26
6	8	4	---	44	---	---	---	---	44	---	3	3
Total	---	---	---	---	---	---	---	---	---	1,017	546	1,563

EMPLOYEES WHO WORKED NIGHT TURNS ONLY

---	---	---	---	7	13	13	13	91	91	1	---	1
---	---	---	---	7	12½	12½	12½	87½	87½	---	---	1
---	---	---	---	7	12	12	12	84	84	1	---	3
---	---	---	---	6	13	13	13	78	78	3	---	2
---	---	---	---	6	12	12	12	72	72	---	---	2
---	---	---	---	6	12	10	10	70	70	5	21	36
---	---	---	---	7	6	11½	11½	69	69	---	---	2
---	---	---	---	5	12	---	---	60	60	35	---	36
---	---	---	---	6	10	10	---	60	60	7	---	9
---	---	---	---	6	10	10	10	60	60	3	11	14
---	---	---	---	5	11	---	---	55	55	3	---	3
---	---	---	---	5	10	---	---	50	50	15	---	15
---	---	---	---	6	8	8	8	48	48	---	5	5
---	---	---	---	6	8	8	8	48	48	6	3	9
---	---	---	---	5	8	---	---	40	40	7	---	7
Total	---	---	---	---	---	---	---	---	---	86	70	156

EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER

7	11	11	77	7	13	13	13	91	84	---	14	14
7	12	12	84	7	12	12	12	84	84	---	81	81
6	12	12	72	7	12	12	12	84	84	---	22	22
7	12	12	84	7	12	12	12	84	81	---	---	6
7	12	12	84	6	12	12	---	72	78	---	6	6
7	12	12	84	6	12	---	12	72	78	2	2	4
6	12	12	72	7	12	12	12	84	78	---	14	14
6	10	10	60	6	14	---	---	84	72	2	---	2
6	11	11	66	6	13	13	13	78	72	60	---	64
6	12	12	72	6	12	12	12	72	72	---	4	5
6	12	12	72	6	12	12	---	72	72	---	241	241
6	12	12	72	6	12	---	12	72	72	73	11	84
7	11	11	77	6	11	11	11	66	71½	---	3	3
7	10	10	70	7	10	10	10	70	70	---	21	21
6	10	10	60	6	13	---	13	78	69	---	3	3
6	12	12	72	6	12	6	---	66	69	---	2	2
6	12	11	71	6	12	6	---	66	68½	---	4	4

TABLE E (9).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—*SHEET MILLS*—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district			
Day turns					Night turns					Average hours per week	Pittsburgh	Great Lakes and Middle West	Total
Turns per week	Hours				Turns per week	Hours							
	Monday to Friday	Saturday	Sunday	Per week		Monday to Friday	Saturday	Sunday	Per week				

EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER—Continued

6	11½	6	---	63½	6	11½	---	11½	69	66¼	---	2	2
6	10	10	---	60	6	12	---	12	72	66	8	2	10
6	11	11	---	66	6	11	---	11	66	66	50	4	54
5	10	---	---	50	6	13½	---	13½	81	65½	---	47	47
6	10	10	10	60	7	10	10	10	70	65	---	1	1
6	10	4	---	54	6	12	---	12	72	63	9	---	9
6	10	10	---	60	6	11	---	11	66	63	---	31	31
7	10	10	5	65	6	10	---	10	60	62½	2	---	2
6	10	10	---	60	5	12	---	12	60	60	---	---	41
6	10	10	10	60	6	10	10	10	60	60	13	---	13
6	10	10	---	60	6	10	10	10	60	60	---	119	119
6	10	10	---	60	6	10	---	10	60	60	95	---	198
6	10	9	---	59	6	10	---	10	60	59½	135	103	135
6	10	9	---	59	6	10	---	9	59	59	5	---	5
6	10½	5	---	57½	5	12	---	12	60	58¼	---	43	43
6	10	8	---	58	6	10	---	8	58	58	4	---	4
6	10	4	---	54	5	12	---	12	60	57	100	---	109
6	9½	9½	---	57	6	9½	---	9½	57	57	19	---	19
6	10	10	---	60	5	10	---	10	50	55	103	---	103
6	9	9	---	54	6	9	---	9	54	54	43	---	43
6	9	8	---	53	7	9	---	9	54	53½	12	---	12
7	8	8	8	56	7	8	8	8	56	56	55	6	61
6	8	8	8	48	6	8	8	8	48	48	3	---	3
7	8	8	8	56	6	8	8	8	48	50½	13	---	13
6	8	8	8	48	6	8	8	8	48	48	32	18	50
6	8	8	---	48	6	8	8	8	48	48	---	20	20
6	8	8	---	48	6	8	8	8	48	48	14	---	14
6	8	8	---	48	6	8	8	8	48	48	201	78	279
6	8	8	---	48	6	8	8	8	48	48	3	3	6
6	8	8	8	48	6	8	8	8	48	48	3	---	3
6	8	6	---	46	6	8	6	---	46	46	---	4	4
6	8	9	---	49	5	8	---	8	40	45½	---	4	4
6	8	8	---	48	6	8	8	8	48	48	862	---	862
6	8	8	---	48	5	8	---	8	40	45½	---	501	501
6	8	6	---	46	5	8	---	8	40	44½	---	70	70
6	8	8	---	48	5	8	---	8	40	42½	2,713	626	3,339
5	8	---	---	40	5	8	---	8	40	42½	---	1,172	1,172
Total	---	---	---	---	---	---	---	---	---	---	4,684	3,287	7,971

Of the total number of sheet mill employees reported, 6,454, or 67 per cent, worked 8 hours per day, 2,209, or 23 per cent, worked 10 hours per day, and 1,039, or 11 per cent, worked 12 hours. Very little 7-day work was reported in this department, only 327, or 3 per cent of all employees, worked 7 days per week all the time and 68, or 1 per cent, a part of the time. One per cent of all employees worked 7 days per week and 12 hours per day regularly. The basic figures are set forth by districts in the following table. A few minor groupings do not appear in this summary.

In preparing the summary only the regular hours per turn an employee worked on Monday to Friday are considered, regardless of the length of the turn on Saturday and Sunday.

SUMMARY OF PRINCIPAL GROUPS IN TABLE E (9)

Item	Number of employees who worked specified days and hours			Per cent of total
	Pitts- burgh district	Great Lakes and Middle West district	Total	
Total employees in sheet mills.....	5,787	3,903	9,690	100
Employees who worked—				
7-day week all the time.....	178	149	327	3
7-day week part of the time.....	20	48	68	1
12 or more hours per day.....	427	612	1,039	11
7-day week and 12 or more hours per day all the time.....	5	113	115	1
7-day week and 12 or more hours per day part of the time...	2	44	46	(¹)
10 hours per day.....	1,457	752	2,209	23
7-day week and 10 or more hours per day all the time.....	114	32	146	2
7-day week and 10 or more hours per day part of the time..	2	1	3	(¹)
8 hours per day.....	3,930	2,524	6,454	67
7-day week and 8 hours per day all the time.....	55	9	64	1
7-day week and 8 hours per day part of the time.....	16	-----	16	(¹)

¹ Less than 1 per cent.

TIN-PLATE MILLS

Data for 1924 were collected from the pay rolls of 9 tin-plate plants and cover 10,549 employees in all occupations. Of this number, 5,067 are found in the principal productive occupations for which separate figures are given. Data were first obtained for this department in 1910, and comparative figures are presented for the period 1910 to 1924.¹

Considering the principal productive occupations as a whole, average full-time hours per week remain unchanged in 1924 as compared with 1922 and are 6 per cent less than in 1913 and 4 per cent less than in 1910.

The study also shows there was a large increase in earnings per hour in 1924 as compared with any other year for which data are presented except 1919 and 1920. Hourly earnings in those years were unusually high and were from 3 to 18 per cent greater in the principal productive occupations combined than in 1924. The 1924 hourly earnings, however, were 22 per cent above those for 1922 and 114 per cent above those for 1913; in other words, more than double the hourly earnings for 1913.

Average full-time earnings per week followed very closely the course of average hourly earnings, as variations in the average full-time hours per week were very slight as compared with the changes in hourly earnings.

The most significant facts concerning average earnings and average hours in each of the principal productive occupations in tin-plate mills are shown in Table A (10). While the customary working time of the 20 occupations combined shows no change in 1924 as compared with 1922, when considered separately changes are noted in the working hours of the shearing crew, tinning department, and laborers. The averages for the heating and rolling crews remain the same, 42.7 hours per week throughout the entire period, 1910 to 1924. For example, branners, male, tinning department, customarily worked 67.8 hours per week in 1910 and continued to do so until 1913 when the average was reduced to 63.7. Working time changed but little during the period 1913 to 1915, but in 1919 the average was reduced to 61.3 hours per week. The average was increased slightly during 1920 and 1922, but in 1924 dropped to the new low average of 52.2 hours.

Average earnings per hour increased in each of the 20 principal productive occupations in 1924 as compared with 1922 and all other years except 1919 and 1920. The 1920 figures are higher in each occupation than those in 1924, and the averages in 1919 are greater in some occupations but lower in others. For example, the average of earnings per hour of laborers was less than 20 cents per hour, 1910 to 1915, but in 1919 earnings were advanced to an average of 46.1 cents per hour. The increase continued to 53.3 cents in 1920, but dropped back to 35.9 cents in 1922. The average earnings per hour of laborers in 1924 was 43.9 cents. Table A (10) shows like figures for the other occupations.

¹ No data were collected for the years 1916, 1917, 1918, 1921, and 1923.

Average full-time earnings per week increased or decreased in each principal productive occupation in about the same proportion as average hourly earnings.

The distribution of employees according to their average full-time hours per week shows no change from year to year for the heating and rolling crews, all appearing in the group "48 and under." The occupations of tanners, redippers, and risers show 100 per cent of the employees in the group "48 and under" since 1920. All of the shear-men and shear-men's helpers appear in that group for the first time in 1924.

Index numbers for average full-time hours per week, average earnings per hour, and average full-time earnings per week are also contained in Table A (10). These are simply percentages computed from the averages presented in the table, using the average for 1913 as the base or 100 per cent. The index numbers for this department as a whole (all principal productive occupations combined) appear as shown on page 5.

TABLE A (10).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—TIN-PLATE MILLS

[For explanation of this table see p. 13]

Occupation and year	Number of plants	Number of employ-ees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index number (1913=100)			Per cent of employees whose average full-time hours per week were—						
						Full-time hours per week	Earn-ings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84		
Rollers:															
1910.....	5	174	42.7	\$1.025	\$43.73	100	90	90	100						
1911.....	6	201	42.7	1.109	47.33	100	97	97	100						
1912.....	6	229	42.7	1.097	46.82	100	96	96	100						
1913.....	9	356	42.7	1.139	48.59	100	100	100	100						
1914.....	10	345	42.7	1.115	47.59	100	98	98	100						
1915.....	10	349	42.7	1.106	47.17	100	97	97	100						
1919.....	9	410	42.7	2.248	95.99	100	197	198	100						
1920.....	9	476	42.7	2.542	108.54	100	223	223	100						
1922.....	9	400	42.7	1.701	72.56	100	149	149	100						
1924.....	9	414	42.7	2.099	89.36	100	184	184	100						
Rollers, level handed:															
1919.....	7	46	42.7	1.362	58.16				100						
1920.....	7	212	42.7	1.599	68.29				100						
1922.....	3	138	42.7	.924	38.62				100						
1924.....	6	166	42.7	1.080	46.16				100						
Roughers:															
1910.....	5	174	42.7	.425	18.14	100	80	80	100						
1911.....	6	196	42.7	.507	21.63	100	95	95	100						
1912.....	6	216	42.7	.513	21.89	100	96	96	100						
1913.....	10	380	42.7	.533	22.73	100	100	100	100						
1914.....	11	367	42.7	.560	23.87	100	105	105	100						
1915.....	11	366	42.7	.562	23.96	100	105	105	100						
1919.....	9	447	42.7	1.193	50.94	100	224	224	100						
1920.....	9	502	42.7	1.368	58.21	100	256	256	100						
1922.....	9	429	42.7	.893	38.08	100	168	168	100						
1924.....	9	465	42.7	1.150	49.11	100	216	216	100						
Catchers:															
1910.....	5	174	42.7	.427	18.23	100	92	92	100						
1911.....	6	198	42.7	.487	20.79	100	105	105	100						
1912.....	6	239	42.7	.403	17.20	100	87	87	100						
1913.....	10	354	42.7	.463	19.74	100	100	100	100						
1914.....	11	347	42.7	.468	19.95	100	101	101	100						
1915.....	11	361	42.7	.489	20.87	100	106	106	100						
1919.....	9	507	42.7	1.014	43.30	100	219	219	100						
1920.....	9	541	42.7	1.217	51.95	100	263	263	100						
1922.....	9	456	42.7	.817	34.83	100	176	176	100						
1924.....	9	465	42.7	1.003	42.83	100	217	217	100						

TABLE A (10).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—TIN-PLATE MILLS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index number (1913=100)			Per cent of employees whose average full-time hours per week were—									
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under 60	Over 48 and under 60	60	Over 60 and under 72	72	Over 72 and under 84	84			
Screw boys:																		
1910.....	5	174	42.7	\$0.308	\$13.15	100	84	84	100									
1911.....	6	198	42.7	.345	14.72	100	94	94	100									
1912.....	6	221	42.7	.352	15.03	100	96	96	100									
1913.....	10	337	42.7	.366	15.64	100	100	100	100									
1914.....	11	384	42.7	.385	16.43	100	105	105	100									
1915.....	11	372	42.7	.389	16.59	100	106	106	100									
1919.....	9	466	42.7	.818	34.93	100	223	223	100									
1920.....	9	585	42.7	.973	41.54	100	266	266	100									
1922.....	9	476	42.7	.676	28.65	100	185	183	100									
1924.....	9	484	42.7	.840	36.15	100	230	231	100									
Doublers:																		
1910.....	5	174	42.7	.632	26.97	100	85	85	100									
1911.....	6	205	42.7	.706	30.13	100	95	95	100									
1912.....	6	247	42.7	.677	28.90	100	91	92	100									
1913.....	10	341	42.7	.740	31.58	100	100	100	100									
1914.....	10	324	42.7	.734	31.32	100	99	99	100									
1915.....	10	322	42.7	.718	30.63	100	97	97	100									
1919.....	8	352	42.7	1.408	60.12	100	190	190	100									
1920.....	9	330	42.7	1.655	70.69	100	224	224	100									
1922.....	9	322	42.7	1.046	44.80	100	141	142	100									
1924.....	8	345	42.7	1.243	53.07	100	168	168	100									
Doublers level handed:																		
1910.....	4	46	42.7	.567	24.20	100	100	100	100									
1911.....	5	54	42.7	.559	23.84	100	99	99	100									
1912.....	5	62	42.7	.561	23.92	100	99	99	100									
1913.....	5	84	42.7	1.114	47.57	100	196	197	100									
1914.....	8	382	42.7	1.290	55.09	100	228	228	100									
1915.....	7	284	42.7	.866	36.81	100	153	152	100									
1919.....	7	303	42.7	1.133	48.38	100	200	200	100									
Doublers' helpers:																		
1910.....	5	174	42.7	.324	13.82	100	90	90	100									
1911.....	6	191	42.7	.351	14.97	100	97	97	100									
1912.....	6	193	42.7	.370	15.81	100	102	102	100									
1913.....	10	344	42.7	.362	15.43	100	100	100	100									
1914.....	10	330	42.7	.387	16.49	100	107	107	100									
1915.....	10	324	42.7	.402	17.17	100	111	111	100									
1919.....	9	406	42.7	.888	37.92	100	245	246	100									
1920.....	9	384	42.7	1.014	43.28	100	280	280	100									
1922.....	8	345	42.7	.686	28.94	100	190	188	100									
1924.....	9	337	42.7	.855	36.45	100	236	236	100									
Heaters:																		
1910.....	5	174	42.7	.648	27.63	100	95	95	100									
1911.....	6	215	42.7	.714	30.47	100	105	105	100									
1912.....	6	314	42.7	.675	28.78	100	99	99	100									
1913.....	6	312	42.7	.679	28.99	100	100	100	100									
1914.....	9	142	42.7	.752	32.10	100	111	111	100									
1915.....	9	211	42.7	.725	30.95	100	107	107	100									
1919.....	9	288	42.7	1.458	62.26	100	215	215	100									
1920.....	8	182	42.7	1.722	73.51	100	254	254	100									
1922.....	8	149	42.7	1.170	49.84	100	172	172	100									
1924.....	8	152	42.7	1.449	61.80	100	213	213	100									
Heaters, level handed:																		
1910.....	6	414	42.7	.595	25.38	100	100	100	100									
1911.....	6	430	42.7	.622	26.53	100	105	105	100									
1912.....	6	294	42.7	.611	26.08	100	103	103	100									
1913.....	7	272	42.7	1.273	54.36	100	214	214	100									
1914.....	9	756	42.7	1.465	62.57	100	246	247	100									
1915.....	9	656	42.7	1.001	42.70	100	168	168	100									
1919.....	9	720	42.7	1.229	52.46	100	207	207	100									

TABLE A (10).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—TIN-PLATE MILLS—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index number (1913=100)			Per cent of employees whose average full-time hours per week were—					
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	Over 60 and under 72	Over 72 and under 84	84	
Heaters' helpers:														
1910.....	4	165	42.7	\$0.348	\$14.84	100	81	81	100	—	—	—	—	—
1911.....	5	166	42.7	.436	18.60	100	101	101	100	—	—	—	—	—
1912.....	5	109	42.7	.396	16.92	100	92	92	100	—	—	—	—	—
1913.....	8	147	42.7	.430	18.36	100	100	100	100	—	—	—	—	—
1914.....	8	127	42.7	.476	20.32	100	111	111	100	—	—	—	—	—
1915.....	8	202	42.7	.455	19.43	100	106	106	100	—	—	—	—	—
1919.....	8	241	42.7	1.052	44.92	100	245	245	100	—	—	—	—	—
1920.....	8	230	42.7	1.174	50.14	100	273	273	100	—	—	—	—	—
1922.....	8	135	42.7	.847	36.02	100	197	196	100	—	—	—	—	—
1924.....	8	252	42.7	.981	41.88	100	228	228	100	—	—	—	—	—
Shearmen:														
1910.....	5	58	52.7	.497	25.68	93	102	94	53	12	34	—	—	—
1911.....	6	65	52.8	.555	28.72	93	114	105	54	11	35	—	—	—
1912.....	6	72	51.8	.573	29.00	92	118	106	60	10	31	—	—	—
1913.....	9	126	56.5	.485	27.34	100	100	100	6	82	13	—	—	—
1914.....	9	116	56.9	.486	27.61	101	100	101	3	84	14	—	—	—
1915.....	8	112	57.3	.514	29.55	101	106	108	—	86	14	—	—	—
1919.....	6	140	48.3	1.368	66.07	85	282	242	56	44	—	—	—	—
1920.....	6	103	44.1	1.280	56.52	78	264	207	80	20	—	—	—	—
1922.....	8	118	44.6	.915	40.52	79	189	148	83	17	—	—	—	—
1924.....	8	123	43.4	1.137	49.35	77	234	181	100	—	—	—	—	—
Shearmen's helpers:														
1910.....	2	25	61.8	.118	7.81	111	72	80	—	80	20	—	—	—
1911.....	2	31	59.7	.118	7.02	107	72	77	26	74	—	—	—	—
1912.....	3	35	57.6	.136	7.71	103	82	84	19	20	63	—	3	—
1913.....	4	43	55.8	.165	6.13	100	100	100	19	51	14	16	—	—
1914.....	4	42	55.3	.168	6.18	99	102	101	17	52	14	17	—	—
1915.....	3	38	56.5	.150	8.51	101	91	93	67	15	18	—	—	—
1919.....	2	29	58.9	.539	28.05	97	327	318	31	69	—	—	—	—
1920.....	1	22	48.5	.731	36.18	89	443	396	—	100	—	—	—	—
1922.....	2	33	49.4	.413	20.40	89	250	223	27	73	—	—	—	—
1924.....	2	26	45.5	.469	21.84	82	284	234	100	—	—	—	—	—
Openers, male:														
1910.....	3	94	57.5	.221	12.72	101	81	82	—	100	—	—	—	—
1911.....	4	84	57.3	.266	15.24	101	97	98	—	100	—	—	—	—
1912.....	5	93	56.9	.296	18.86	100	108	108	4	96	—	—	—	—
1913.....	7	210	56.9	.274	15.58	100	100	100	—	100	—	—	—	—
1914.....	7	201	56.8	.266	15.14	100	97	97	—	100	—	—	—	—
1915.....	7	227	57.2	.247	14.13	101	90	91	—	93	7	—	—	—
1919.....	5	235	52.3	.800	41.84	92	292	269	23	77	—	—	—	—
1920.....	4	204	56.2	.728	40.55	99	266	260	—	100	—	—	—	—
1922.....	6	186	49.0	.631	29.08	86	230	187	36	64	—	—	—	—
1924.....	6	224	55.3	.721	39.87	97	263	256	11	80	8	—	—	—
Tinners:														
1910.....	4	224	42.9	.402	17.27	98	93	92	98	2	—	—	—	—
1911.....	5	283	43.0	.429	18.48	99	99	98	98	2	—	—	—	—
1912.....	5	294	43.4	.444	19.28	100	103	102	94	6	—	—	—	—
1913.....	8	484	43.6	.433	18.84	100	100	100	95	5	(1)	—	—	—
1914.....	8	486	43.5	.442	19.22	100	102	102	95	5	(1)	—	—	—
1915.....	8	487	43.3	.442	19.13	99	102	102	97	3	(1)	—	—	—
1919.....	8	683	43.0	.977	42.01	99	226	223	97	3	—	—	—	—
1920.....	9	702	42.9	1.114	47.85	98	257	254	100	—	—	—	—	—
1922.....	6	410	43.3	.795	34.20	99	184	182	100	—	—	—	—	—
1924.....	6	361	43.4	.976	42.39	100	225	225	100	—	—	—	—	—
Redippers:														
1910.....	1	14	46.2	.570	26.56	87	106	95	71	29	—	—	—	—
1911.....	1	17	47.2	.619	29.32	89	115	105	71	29	—	—	—	—
1912.....	1	10	55.0	.592	32.58	104	110	116	—	100	—	—	—	—
1913.....	3	26	53.0	.536	28.03	100	100	100	42	54	4	—	—	—
1914.....	3	23	53.0	.538	28.55	100	100	102	43	52	4	—	—	—
1915.....	3	19	51.4	.563	28.81	97	105	103	58	37	5	—	—	—
1919.....	2	29	46.9	1.272	59.66	88	237	213	55	45	—	—	—	—
1920.....	3	27	43.1	1.538	66.26	81	287	236	100	—	—	—	—	—
1922.....	2	33	43.1	1.027	44.26	81	192	158	100	—	—	—	—	—
1924.....	2	38	43.0	1.235	53.11	81	230	189	100	—	—	—	—	—

¹ Less than 1 per cent.

TABLE A (10).—AVERAGE CUSTOMARY FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK, AND INDEX NUMBERS THEREFOR, 1910 TO 1924, BY OCCUPATION—*TIN-PLATE MILLS*—Continued

Occupation and year	Number of plants	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week	Index number (1913=100)			Per cent of employees whose average full-time hours per week were—													
						Full-time hours per week	Earnings per hour	Full-time earnings per week	48 and under	Over 48 and under 60	60	Over 60 and under 72	72	Over 72 and under 84	84							
Risers:																						
1910	2	34	44.1	\$0.262	\$11.51	98	94	91	88	12												
1911	3	42	44.8	.275	12.30	99	99	98	86	14												
1912	3	30	50.1	.239	11.98	111	86	95	40	60												
1913	3	34	45.1	.279	12.59	100	100	100	100													
1914	4	48	51.3	.268	13.70	114	96	109	52	46	2											
1915	4	41	49.5	.288	14.16	110	103	112	66	32	2											
1919	3	46	47.4	.642	30.43	105	230	242	50	50												
1920	3	41	43.2	.791	34.12	96	284	271	100													
1922	2	54	42.9	.528	22.65	95	189	180	100													
1924	2	39	42.9	.703	30.16	95	252	240	100													
Branners, male:																						
1910	2	12	67.8	.170	11.52	106	89	95				100										
1911	2	20	67.7	.170	11.50	106	89	95				100										
1912	2	16	67.7	.170	11.51	106	89	95				100										
1913	4	37	63.7	.190	12.14	100	100	100			43		46	11								
1914	4	41	64.1	.198	12.69	101	104	105			39		51	10								
1915	4	34	65.4	.203	13.22	103	107	109			24		76									
1919	6	60	61.3	.452	27.71	96	238	228	23		30	27	13							7		
1920	6	48	62.4	.624	38.68	98	328	319	23	10		35	31									
1922	6	32	65.1	.455	28.98	102	239	239	31	6		38		25								
1924	6	73	52.2	.536	27.83	82	282	229	74	3		16		7								
Assorters, female:																						
1910	4	101	49.7	.128	6.41	93	79	73	46	54												
1911	5	120	50.7	.138	7.03	94	85	80	38	62												
1912	5	127	51.4	.145	7.39	96	89	84	37	63												
1913	6	171	53.7	.163	8.75	100	100	100	25	75												
1914	6	172	53.3	.153	8.26	99	94	94	27	73												
1915	6	208	55.4	.162	8.98	103	99	103	23	77												
1919	6	279	48.5	.417	20.22	90	256	231	44	56												
1920	7	295	46.9	.465	21.83	87	285	249	43	57												
1922	6	230	43.3	.365	15.84	81	224	181	98		2											
1924	6	291	43.6	.422	18.40	81	259	210	98		2											
Laborers:																						
1910	4	191	60.6	.165	9.97	98	87	86			53	24	23									
1911	5	238	61.0	.164	10.01	99	87	86			37	38	24	1								
1912	6	276	61.6	.167	10.32	100	88	89			30	43	25	(1)						(1)		
1913	9	575	61.6	.189	11.64	100	100	100			24	18	58	(1)						(1)		
1914	9	469	62.4	.189	11.78	101	100	101			12	16	72									
1915	9	444	61.6	.190	11.72	100	101	101			35	16	51									
1919	6	418	64.3	.461	29.64	104	244	255	1	13	36	32	12	(1)	2					3		
1920	8	271	60.5	.593	32.19	98	282	277			62	13	21	5								
1922	9	231	59.4	.359	21.28	96	190	183			72	19	9									
1924	9	197	56.9	.439	24.99	92	232	215	7	29	55	9	1									

¹ Less than 1 per cent.

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The customary working time per week of all employees covered in the tin-plate mills, in each of the 5 years, 1914, 1915, 1920, 1922, and 1924,² has been classified, and the number and per cent of employees coming under each classification are shown in Table B (10).

The working time of practically all of the employees in the tin-plate department was either 5 days, 5 days, and 6 days in rotation, or 6 days. In all plants covered the regular-turn employees, com-

² These 5 years are the only ones in which data were collected covering all principal productive and other occupations.

prising about 50 per cent of all employees scheduled, were divided into three crews each working 8 hours per turn, 5 turns per week, Monday to Friday, inclusive, with one crew working an extra turn Saturday morning. Each crew advanced 1 turn each week thus giving to each the extra Saturday turn every third week. The remaining employees were made up largely of mechanics and laborers who usually work 6 days per week.

In 1924 51 per cent of the 10,549 employees covered worked 5 days, 5 days, and 6 days in rotation, and 44 per cent worked 6 days per week. The working time of employees in this department has been subject to but few changes during the past several years, and scarcely any change is noticed in the various percentages as compared with previous years.

TABLE B (10).—NUMBER AND PER CENT OF EMPLOYEES WHO CUSTOMARILY WORKED EACH SPECIFIED NUMBER OF DAYS PER WEEK, 1914 TO 1924, BY DISTRICT AND YEAR—*TIN-PLATE MILLS*

[For explanation of this table, see p. 13]

District and year	Number of plants	Number of employees	Number of employees whose customary working days per week were—					Per cent of employees whose customary working days per week were—						
			5	5 and 6 alternately	5, 5, and 6 in rotation	6	6 and 7 alternately	7	5	5, 5, and 6 in rotation	6	6 and 7 alternately	7	
Pittsburgh:														
1914.....	6	3,518	2	210	2,030	1,238	---	38	(¹)	6	58	35	---	1
1915.....	6	3,485	3	181	1,984	1,277	6	34	(¹)	5	57	37	(¹)	1
1920.....	6	7,266	---	417	4,125	2,682	30	12	---	6	57	37	(¹)	(¹)
1922.....	6	6,073	46	370	3,446	2,154	26	31	1	6	56	35	(¹)	1
1924.....	6	7,173	21	186	3,814	2,904	129	119	(¹)	3	53	40	2	2
Great Lakes and Middle West:														
1914.....	5	2,515	2	4	1,458	1,007	16	28	(¹)	(¹)	58	40	1	1
1915.....	5	2,662	---	---	1,548	1,002	14	98	---	6	58	38	---	4
1920.....	3	3,257	65	61	1,702	1,299	20	110	2	2	52	40	1	3
1922.....	3	3,093	50	69	1,534	1,332	82	26	2	2	49	43	3	1
1924.....	3	3,376	---	4	1,531	1,781	69	41	---	(¹)	45	51	2	1
Total:														
1914.....	11	6,033	4	214	3,488	2,245	16	66	(¹)	4	58	37	(¹)	1
1915.....	11	6,147	3	181	3,532	2,279	20	132	(¹)	3	57	37	(¹)	2
1920.....	9	10,523	65	478	5,827	3,981	50	122	1	5	55	38	(¹)	1
1922.....	9	9,166	96	439	4,980	3,486	108	57	1	5	54	38	2	1
1924.....	9	10,549	21	190	5,345	4,635	198	160	(¹)	2	51	44	2	2

¹ Less than 1 per cent.

Table C (10) presents the most significant facts relative to earnings and hours of labor of employees in the principal productive occupations in the 9 tin mills covered in 1924. The occupations have been arranged as nearly as possible in the order of production, and figures are shown for each of the two districts separately and both districts combined for each occupation.

Referring to the first occupation presented, rollers, the 325 positions were kept filled by a total of 414 men during the pay period scheduled. As stated in the explanation of the table, on page 14, many of the employees worked only part time in this occupation and 414 men were necessary to keep the 325 positions filled. However, it

must not be assumed that these employees worked only as rollers during the period. Many of them worked level handed with the rougher or at other occupations, and the number of employees shown in the separate occupations in the following table can not be combined as the number of employees who worked in the principal productive occupations in this department.

The average customary full-time of the 414 men working in the 325 positions was 5.3 turns per week, 8 hours per turn, and 42.7 hours per week. These averages are the same in both districts, and all employees in the heating and the rolling crews work on a similar basis. Thus, in the distribution of the customary working time of the 414 rollers or any other hot-mill employees, all worked a week of less than 44 hours.

The average hourly earnings of rollers ranged from \$1.917 in the Great Lakes and Middle West district to \$2.157 in the Pittsburgh district, with an average of \$2.099 for both districts combined. Average earnings for the half-month period reached the high point in the Pittsburgh district, \$171.27, and employees in that district also worked more hours at this occupation than those in the Great Lakes and Middle West district, or an average of 79.4 hours. These averages are only for the occupation under consideration and do not include earnings that employees may have made in other occupations during the same pay period.

The average of full-time earnings per week of rollers was \$81.86 in the Great Lakes and Middle West district and \$92.10 in the Pittsburgh district. The average for both districts was \$89.36.

TABLE C (10).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND AVERAGE ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND DISTRICT—*TIN-PLATE MILLS*

[See explanation on p. 3 of adjustment of time worked and earnings received]

Occupation and district	Number of plants	Positions				Employees working in scheduled pay period (16 days) at specified occupation												Average full-time earnings per week		
		Number	Average customary full time of employees in the positions			Number	Number whose customary full-time hours per week were—								Average hours worked	Average earnings in pay period	Average earnings per hour			
			Turns per week	Hours per turn	Hours per week		44 and under	Over 44 and under 48	48	Over 48 and under 56	56	Over 56 and under 60	60	Over 60 and under 72					72	
Rollers:																				
Pittsburgh	6	245	5.3	8.0	42.7	303	303										79.4	\$171.27	\$2.157	\$92.10
Great Lakes and Middle West	3	80	5.3	8.0	42.7	111	111										69.1	132.49	1.917	81.86
Total	9	325	5.3	8.0	42.7	414	414										76.6	160.89	2.099	89.36
Rollers, level banded:																				
Pittsburgh	3	30	5.3	8.0	42.7	93	93										29.2	31.71	1.085	46.33
Great Lakes and Middle West	3	38	5.3	8.0	42.7	73	73										37.7	40.55	1.076	45.95
Total	6	68	5.3	8.0	42.7	166	166										33.0	35.60	1.080	46.16
Roughers:																				
Pittsburgh	6	251	5.3	8.0	42.7	339	339										72.8	87.44	1.201	65.16
Great Lakes and Middle West	3	102	5.3	8.0	42.7	126	126										71.7	72.43	1.010	43.13
Total	9	353	5.3	8.0	42.7	465	465										72.5	83.37	1.150	49.11
Catchers:																				
Pittsburgh	6	260	5.3	8.0	42.7	340	340										75.5	76.93	1.019	43.51
Great Lakes and Middle West	3	102	5.3	8.0	42.7	125	125										71.5	68.18	.954	40.74
Total	9	362	5.3	8.0	42.7	465	465										74.4	74.58	1.003	42.83

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Screw boys:																	
Pittsburgh	6	279	5.3	8.0	42.7	364	364							76.0	67.13	.883	37.70
Great Lakes and Middle West	3	124	5.3	8.0	42.7	120	120							94.5	69.48	.736	31.43
Total	9	403	5.3	8.0	42.7	484	484							80.6	67.71	.840	36.15
Doublers:																	
Pittsburgh	6	187	5.3	8.0	42.7	267	267							69.5	86.13	1.240	52.95
Great Lakes and Middle West	2	68	5.3	8.0	42.7	78	78							75.7	94.90	1.253	53.50
Total	8	255	5.3	8.0	42.7	345	345							70.9	88.11	1.243	53.07
Doublers, level handed:																	
Pittsburgh	5	181	5.3	8.0	42.7	268	268							65.6	75.08	1.144	48.85
Great Lakes and Middle West	2	8	5.3	8.0	42.7	35	35							20.7	17.79	.858	36.64
Total	7	189	5.3	8.0	42.7	303	303							60.4	68.47	1.133	48.38
Doublers, helpers:																	
Pittsburgh	6	186	5.3	8.0	42.7	242	242							75.9	67.55	.890	38.00
Great Lakes and Middle West	3	78	5.3	8.0	42.7	95	95							73.5	55.94	.761	32.49
Total	9	264	5.3	8.0	42.7	337	337							75.2	64.28	.855	36.45
Heaters:																	
Pittsburgh	5	85	5.3	8.0	42.7	114	114							73.5	111.39	1.516	64.73
Great Lakes and Middle West	3	32	5.3	8.0	42.7	38	38							71.0	88.09	1.241	52.99
Total	8	117	5.3	8.0	42.7	152	152							72.8	105.56	1.449	61.80
Heaters, level handed:																	
Pittsburgh	6	381	5.3	8.0	42.7	527	527							70.7	89.32	1.264	53.97
Great Lakes and Middle West	3	133	5.3	8.0	42.7	193	193							67.9	76.82	1.132	48.34
Total	9	514	5.3	8.0	42.7	720	720							69.9	85.97	1.229	52.46
Heaters' helpers:																	
Pittsburgh	5	106	5.3	8.0	42.7	142	142							73.7	75.68	1.027	43.86
Great Lakes and Middle West	3	80	5.3	8.0	42.7	110	110							72.2	66.47	.921	39.33
Total	8	186	5.3	8.0	42.7	252	252							73.0	71.66	.981	41.88
Shearmen:																	
Pittsburgh	5	60	5.3	7.9	42.8	69	63		6					84.5	96.65	1.143	48.92
Great Lakes and Middle West	3	44	5.7	7.8	44.2	54	26	23	5					79.2	89.30	1.127	55.00
Total	8	104	5.6	7.9	43.4	123	89	23	11					82.2	93.42	1.137	49.35
Shearmen's helpers:																	
Great Lakes and Middle West	2	24	6.0	7.6	45.5	26		21	5					86.9	40.73	.469	21.34
Openers, male:																	
Pittsburgh	4	89	6.0	9.3	55.1	112			13	17		63	19	94.6	80.64	.852	46.95
Great Lakes and Middle West	2	92	6.0	9.2	55.4	112		12			65	35		96.1	56.87	.592	32.80
Total	6	181	6.0	9.3	55.3	224		12	13	17	65	98	19	95.4	68.75	.721	39.87

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TABLE C (10).—AVERAGE CUSTOMARY FULL-TIME HOURS WORKED AND AVERAGE ACTUAL EARNINGS PER HOUR AND PER PAY PERIOD, 1924, BY OCCUPATION AND DISTRICT—TIN-PLATE MILLS—Continued

Occupation and district	Number of plants	Positions			Employees working in scheduled pay period (16 days) at specified occupation											Average full-time earnings per week				
		Number	Average customary full time of employees in the positions			Number	Number whose customary full-time hours per week were—							Average hours worked	Average earnings in pay period		Average earnings per hour			
			Turns per week	Hours per turn	Hours per week		44 and under	Over 44 and under 48	48	Over 48 and under 56	56	Over 56 and under 60	60					Over 60 and under 72	72	
Tinners:																				
Pittsburgh	4	274	5.3	8.2	43.5	313	313										88.0	\$84.69	\$0.963	\$41.89
Great Lakes and Middle West	2	45	5.3	8.0	42.7	48	48										80.3	85.90	1.069	45.65
Total	6	319	5.3	8.1	43.4	361	361										87.0	84.86	.976	42.39
Redippers:																				
Pittsburgh	2	28	5.3	8.1	43.0	38	38										72.1	88.98	1.235	53.11
Risers:																				
Pittsburgh	2	31	5.3	8.0	42.9	39	39										75.5	53.10	.703	30.16
Branners, male:																				
Pittsburgh	4	49	5.9	8.5	51.1	59	15		30	2				12			94.5	52.91	.560	28.56
Great Lakes and Middle West	2	10	6.0	9.6	57.6	14			9						5		89.2	38.38	.430	24.77
Total	6	59	6.0	8.7	52.2	73	15		39	2				12	5		93.5	50.13	.536	27.83
Assorters, female:																				
Pittsburgh	4	201	5.7	7.7	43.5	214	135	72						7			94.1	41.08	.436	18.97
Great Lakes and Middle West	2	69	6.0	7.3	44.0	77	77										89.5	33.88	.378	16.63
Total	6	270	5.8	7.6	43.6	291	212	72						7			92.9	39.17	.422	18.40
Laborers:																				
Pittsburgh	6	83	6.0	9.3	56.1	97				1			25	56	14	1	111.0	49.41	.445	24.96
Great Lakes and Middle West	3	69	6.0	9.6	57.9	100			13				32	52	3		89.0	38.45	.432	25.01
Total	9	152	6.0	9.5	56.9	197			13	1			57	108	17	1	99.8	43.85	.439	24.99

Table D (10) shows the number of employees and the average and classified earnings per hour of heaters and doublers in 1924 for each of the two districts separately and both districts combined. These two occupations are selected as representative of the spread or variation in hourly earnings within the occupations in this department.

The average of hourly earnings for heaters in both districts combined was \$1.449 and for doublers, \$1.243. The range of earnings was from 80 cents to \$2.25 per hour for heaters and from 40 cents to \$1.75 for doublers.

TABLE D (10).—AVERAGE AND CLASSIFIED EARNINGS PER HOUR IN TWO SELECTED OCCUPATIONS, 1924, BY DISTRICT—*TIN-PLATE MILLS*

[For explanation of this table see p. 15]

Occupation and district	Number of employees	Average earnings per hour	Number of employees whose earnings per hour were—										
			40 and under 50 cts.	50 and under 60 cts.	60 and under 70 cts.	70 and under 80 cts.	80 and under 90 cts.	90 cts. and under \$1	\$1 and under \$1.25	\$1.25 and under \$1.50	\$1.50 and under \$1.75	\$1.75 and under \$2	\$2 and under \$2.25
HEATERS													
Pittsburgh.....	53	\$1.516					1	1	14	22	12	2	1
Great Lakes and Middle West.....	38	1.241					1	3	14	18	1	1	
Total.....	91	1.449					2	4	28	40	13	3	1
DOUBLERS													
Pittsburgh.....	155	1.240	1	6	27	17	7	10	33	48	6		
Great Lakes and Middle West.....	78	1.253					1	5	35	32	5		
Total.....	233	1.243	1	6	27	17	8	15	68	80	11		

The customary turns per week and hours per turn and per week, together with the average full-time hours per week, of employees in the tin-plate mills are shown in detail, by districts and all districts combined, for the year 1924 in Table E (10). The information was obtained from 9 representative plants and covers 10,549 employees in all occupations.

The table shows the customary number of day turns and night turns per week and the corresponding hours for each turn for each day of the week as well as the full-time hours per week. Employees are divided into three groups as follows: (a) Those who work days only, (b) those who work nights only, and (c) those who alternate or rotate weekly from one shift to another. The order of arrangement begins with the highest average full-time hours per week.

Gas or repair turns have been disregarded when employees customarily work such turns at less frequent intervals than once every three weeks on a 3-turn basis or once every four weeks on a 2-turn basis. In a few instances relief systems have also been omitted where the periods elapsing between reliefs were longer than three or four weeks.

In some instances in the table hours are reported for 7 days, yet the number of days worked is given as 6. This is owing to the fact

that it is a 7-day occupation wherein each employee was relieved 1 day in 7 with no information available, however, as to which day; therefore, the hours for all days have been shown and the relief indicated in the full-time hours per week.

In the main the table is believed to be clear, but some points may need explanation. The first line of the table shows that in the plants canvassed 1 man in the Pittsburgh district was found on a day job requiring him to work 6 days per week and 15 hours per day, Monday to Friday, inclusive, with 10 hours on Saturday—a total of 85 hours per week.

In the third section of the table the first line shows that 10 men in the Great Lakes and Middle West district alternated from 7 turns of 12 hours on day work to 7 turns of 12 hours on night work, averaging 84 hours per week.

When there are three 8-hour turns the second and third are tabulated as night turns.

TABLE E (10).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—TIN-PLATE MILLS

[For explanation of this table see p. 15]

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district			
Day turns					Night turns					Average hours per week	Pittsburgh	Great Lakes and Middle West	Total
Turns per week	Hours				Turns per week	Hours							
	Monday to Friday	Saturday	Sunday	Per week		Monday to Friday	Saturday	Sunday	Per week				

EMPLOYEES WHO WORKED DAY TURNS ONLY

6	15	10	85						85	1		1
7	12	12	84						84		9	9
7	11½	10	77½						77½	1		1
6	12	12	72						72	24	4	28
6	12	10	70						70		8	8
7	10	10	70						70	3	6	9
7	10	9	69						69	2		2
6	11	13	68						68	1		1
6	12	8	68						68		1	1
7	10	9	68						68	13		13
6	11½	9½	67						67		5	5
6	12	6	66						66		1	1
6	11	11	66						66	1	3	4
6	11	10	65						65		13	13
6	11	9	64						64		1	1
6	10½	10½	63						63	6		6
7	10	8	63						63	1		1
7	9	9	63						63	5		6
6	11	5	60						60		1	1
6	10	10	60						60	1	1	2
6	10	10	60						60	614	98	712
6	10	10	60						60	4		4
6	10	9	59						59	300	271	571
6	10	8½	58½						58½	1		1
6	10	8	58						58	182	128	310
6	10	7	57						57	68	3	61
6	10½	9½	57						57	8		8
6	10	6	56						56	19	78	95
6	10	5	55						55	51	74	125
6	10	4	54						54	1		1
6	9	9	54						54	72	6	78
6	9	6	51						51	19	11	30
6	9	5	50						50	7		7
6	8½	7	49½						49½	1		1
6	9	4	49						49	4		4

TABLE E (10).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1924, BY DISTRICT—TIN-PLATE MILLS—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district			
Day turns					Night turns					Average hours per week	Pitts-burgh	Great Lakes and Middle West	Total
Turns per week	Hours				Turns per week	Hours							
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week				

EMPLOYEES WHO WORKED DAY TURNS ONLY—Continued

7	8	8	8	56	-----	-----	-----	-----	56	1	5	6
6	8	8	7	48	-----	-----	-----	-----	48	15	43	58
6	8	7	-----	47	-----	-----	-----	-----	47	-----	1	1
6	8	6	-----	46	-----	-----	-----	-----	46	72	12	84
6	8	5	-----	45	-----	-----	-----	-----	45	-----	75	75
6	8	4	-----	44	-----	-----	-----	-----	44	71	99	170
6	7	6	-----	41	-----	-----	-----	-----	41	-----	32	32
Total..	-----	-----	-----	-----	-----	-----	-----	-----	-----	1,559	988	2,547

EMPLOYEES WHO WORKED NIGHT TURNS ONLY

-----	-----	-----	-----	7	12	12	12	84	84	-----	6	6
-----	-----	-----	-----	7	12	6	12	78	78	-----	1	1
-----	-----	-----	-----	6	12	12	-----	72	72	-----	1	1
-----	-----	-----	-----	6	12	-----	12	72	72	2	-----	3
-----	-----	-----	-----	7	10	10	6	66	66	-----	1	1
-----	-----	-----	-----	5	12	-----	-----	60	60	20	-----	20
-----	-----	-----	-----	6	10	10	10	60	60	5	-----	5
-----	-----	-----	-----	6	10	10	-----	60	60	-----	20	20
-----	-----	-----	-----	6	10	-----	10	60	60	1	2	3
-----	-----	-----	-----	7	8	8	8	56	56	-----	-----	3
-----	-----	-----	-----	6	8	8	8	48	48	3	-----	3
-----	-----	-----	-----	6	8	8	-----	48	48	1	-----	1
-----	-----	-----	-----	6	8	-----	8	48	48	3	-----	3
-----	-----	-----	-----	5	8	-----	-----	40	40	-----	4	4
-----	-----	-----	-----	5	8	-----	8	48	48	-----	-----	1
Total..	-----	-----	-----	-----	-----	-----	-----	-----	-----	38	35	73

EMPLOYEES WHO ALTERNATED WEEKLY FROM ONE TURN TO ANOTHER

7	12	12	12	84	7	12	12	84	84	-----	10	10
7	12	12	12	84	6	12	12	72	78	2	-----	2
7	10	10	10	70	7	11½	11½	11½	80½	75½	2	2
6	11	11	-----	66	6	13	13	78	72	-----	6	6
6	12	12	-----	72	6	12	12	72	72	-----	8	8
6	12	12	-----	72	6	12	12	72	72	-----	3	3
7	10	10	10	70	7	10	10	70	70	2	-----	2
6	12	9	-----	69	6	12	9	69	69	-----	9	9
6	11½	11½	-----	69	6	11½	-----	69	69	7	-----	7
6	12	11	-----	71	6	12	6	66	68½	-----	8	8
6	12	6	-----	66	6	12	6	66	66	-----	8	8
6	11	11	-----	66	6	11	-----	66	66	2	-----	2
7	10	10	10	70	6	10	-----	60	65	15	-----	15
6	11	11	-----	66	5	11	-----	55	60½	40	-----	40
6	10	10	10	60	6	10	10	60	60	9	4	13
6	10	10	-----	60	6	10	10	60	60	3	-----	3
6	10	10	-----	60	6	10	10	60	60	-----	102	102
6	10	10	-----	60	6	10	-----	60	60	224	296	520
6	10	9	-----	59	6	10	10	60	59½	103	-----	103
6	10	9	-----	59	6	10	9	59	59	-----	12	12
6	10	10	-----	60	6	10	-----	58	59	-----	4	4
6	10	8	-----	58	6	10	-----	60	59	3	14	17
6	10	7	-----	57	6	10	-----	60	58½	8	-----	8
6	10	8	-----	58	6	10	8	58	58	-----	6	6
6	10	6	-----	56	6	10	-----	60	58	-----	8	8
6	10	5	-----	55	6	10	-----	60	57½	51	4	55

TABLE E (10).—CUSTOMARY FULL-TIME TURNS PER WEEK AND HOURS PER TURN AND PER WEEK, 1925, BY DISTRICT—*TIN-PLATE MILLS*—Continued

Customary turns and hours worked										Number of employees who worked each specified combination of customary turns and hours, by district			
Day turns					Night turns					Average hours per week	Pitts-burgh	Great Lakes and Middle West	Total
Turns per week	Hours				Turns per week	Hours							
	Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week		Mon-day to Fri-day	Sat-ur-day	Sun-day	Per week				
6	10	4	-----	54	6	10	-----	10	60	57	2	-----	2
6	9	9	-----	54	6	10	-----	10	60	57	112	-----	112
6	10	10	-----	60	5	10	-----	9	50	55	3	-----	3
6	9	9	-----	54	6	9	-----	9	54	54	3	-----	3
6	9	9	-----	54	6	9	-----	9	54	54	-----	2	2
6	9	9	-----	54	6	9	-----	9	54	54	42	-----	42
6	10	4	-----	54	5	10	-----	9	50	52	16	-----	16
7	8	8	8	56	7	8	8	8	56	56	83	-----	83
7	8	8	8	56	7	8	8	8	56	56	4	3	7
7	8	8	8	56	6	8	8	8	48	53½	-----	69	69
7	8	8	8	56	6	8	8	8	48	50½	6	-----	6
6	8	8	-----	48	6	8	8	8	48	50½	106	-----	106
6	8	9	-----	49	6	8	8	8	48	48½	3	-----	3
6	8	8	8	48	6	8	8	8	48	48	38	-----	38
6	8	8	-----	48	6	8	8	8	48	48	3	-----	3
6	8	8	-----	48	6	8	8	8	48	48	3	-----	3
6	8	8	8	48	6	8	8	8	48	48	-----	6	6
6	8	8	-----	48	6	8	8	8	48	48	-----	30	39
6	8	8	-----	48	6	8	8	8	48	48	707	-----	707
6	8	8	8	48	6	8	8	8	48	48	3	13	16
6	8	8	-----	48	6	8	8	8	48	48	-----	45	45
6	8	8	-----	48	6	8	8	8	48	48	-----	67	67
6	8	5	-----	45	6	8	8	8	48	47	-----	1	1
6	8	4	-----	44	6	8	8	8	48	46½	24	-----	24
6	8	5	-----	45	6	8	8	8	48	46½	-----	6	6
6	8	6	-----	46	6	8	6	6	46	46	-----	9	9
6	8	4	-----	44	6	8	8	8	46	46	6	-----	6
6	8	8	-----	48	5	8	8	8	48	45½	-----	47	47
6	8	5	-----	45	6	8	5	5	40	45	-----	13	13
6	8	11	-----	51	5	8	8	8	40	43¾	234	-----	234
6	8	7	-----	47	5	8	8	8	40	43½	6	-----	6
6	8	9	-----	49	5	8	8	8	40	43	62	-----	62
6	8	8	-----	48	5	8	8	8	40	42¾	3,518	1,387	4,905
5	8	-----	40	5	8	8	8	8	48	42¾	-----	144	144
6	7	7	-----	42	5	8	8	8	40	41	121	-----	121
Total	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	5,576	2,353	7,929

Of the total number of tin-plate mill employees reported, 7,183, or 68 per cent, worked 8 hours per day, 2,939, or 28 per cent, worked 10 hours, and 133, or 1 per cent, worked 12 hours. Seven-day work in this department has been reduced to a minimum, and only 160, or 2 per cent, worked 7 days per week all the time, while 198, or 2 per cent, worked 7 days per week part of the time. Less than 1 per cent of the employees worked 7 days per week and 12 hours per day. The basic figures are set forth by districts in the following table. A few minor groupings do not appear in this summary.

In preparing the summary only the regular hours per turn an employee worked on Monday to Friday are considered, regardless of the length of his turn on Saturday and Sunday.

SUMMARY OF PRINCIPAL GROUPS IN TABLE E (10)

Item	Number of employees who worked specified days and hours—			Per cent of total
	Pitts- burgh district	Great Lakes and Middle West district	Total	
Total employees in tin-plate mills	7, 173	3, 376	10, 549	100
Employees who worked:				
7-day week all the time.....	119	41	160	2
7-day week part of the time.....	129	69	198	2
12 or more hours per day.....	49	84	133	1
7-day week and 12 or more hours per day all the time.....	2	26	26	(¹)
7-day week and 12 or more hours per day part of the time.....	2	2	2	(¹)
10 hours per day.....	1, 810	1, 129	2, 939	28
7-day week and 10 hours per day all the time.....	22	6	28	(¹)
7-day week and 10 hours per day part of the time.....	17	17	17	(¹)
8 hours per day.....	5, 095	2, 088	7, 183	68
7-day week and 8 hours per day all the time.....	89	8	97	1
7-day week and 8 hours per day part of the time.....	712	69	181	2

¹ Less than 1 per cent.

